MAY 26 1922
Medical Lib.

VOL. I OLD SERIES VOL. LXXVIII NO. 4

THE

# AMERICAN

# JOURNAL OF PSYCHIATRY

(FORMERLY THE AMERICAN JOURNAL OF INSANITY)

UNDER THE AUSPICES OF

THE AMERICAN PSYCHIATRIC ASSOCIATION

EDITORS

Edward N. Brush, M. D.

J. Montgomery Mosher, M. D. Charles K. Clarke, M. D.

Charles Macfie Campbell, M. D. Albert M. Barrett, M. D.

Henry M. Hurd, M. D. G. Alder Blumer, M. D.

*Editor Emeritus* *Editor Emeritus*

BALTIMORE

THE JOHNS HOPKINS PRESS

APRIL, 1922

Published Quarterly Subscription, $5.00 a Volume

Entered as second-class matter July 31, 1911, at the postoffice at Baltimore, Maryland, under the Act of March 3, 1879.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized on July 3, 1918.

# CONTENTS.

I. **A Preliminary Study of the Precipitating Situation in Two Hundred Cases of Mental Disease.** *Edward A. Strecker* ..... 503

II. **On The Nature of Thinking Disorder.** *F. L. Wells* ..... 537

III. **Rating Scheme for Conduct.** *James S. Plant* ..... 547

IV. **Reversible Schizophrenia.** *Karl A. Menninger* ..... 573

V. **Emotional States and Illegal Acts in Connection with Schizophrenia.** *John Rathbone Oliver* ..... 589

VI. **Blood Constituents and Mental States.** *H. S. Newcomer* ..... 609

VII. **Epilepsy in the Offspring of Epileptics.** *D. A. Thom* and *Gerna S. Walter* ..... 613

VIII. **Environment as it Influences the Development of the Juvenile Delinquent.** *Percy L. Dodge* ..... 629

IX. **Magnesium as a Sedative.** *Paul G. Weston* ..... 637

X. **Industrial Psychiatry.** *Jau Don Ball* ..... 639

XI. **Report of a Case of Epidemic Encephalitis with Cord Changes Suggestive of the Possibility of an Early Syringomyelia.** *Ada F. Harris* ..... 679

XII. **Notes and Comment:**

The Oregon Survey of Mental Defect, Delinquency and Dependency.—The Centenary of the Thesis of Bayle ..... 689

XIII. **Association and Hospital Notes and News:**

The Seventy-Eighth Annual Meeting of The American Psychiatric Association.—An Appeal on Behalf of The Secretary-Treasurer ..... 693

XIV. **Book Reviews:**

Psychoanalysis, Its Theories and Practical Application. By A. A. Brill, Ph. B., M. D. (Philadelphia and London: W. B. Saunders Co. 1922)—Medizinische Psychologie. Ein Leitfaden für Studium und Praxis Von Dr. Ernest Kretschner. (Leipzig Georg Thieme 1922)—An Essay on the Physiology of the Mind. By Francis X. Dercum, M. D., Etc. (Philadelphia and London: W. B. Saunders Co., 1922)—Fourth Annual Report of the Massachusetts Commission on Mental Diseases of the Commonwealth of Massachusetts for the Year ending November 30, 1919.—State of Iowa, 1920, Twelfth Biennial Report of the Board of Control of State Institutions for the Period Ending June 30, 1920—Bulletin of the Iowa Institutions, Vol. XXII, 1920—Transactions of the College of Physicians of Philadelphia. Third series Volume the Forty-Second—Proceedings of the Fifteenth Annual Meeting of the Association of Life Insurance Presidents Held in New York, December 8-9, 1921 ..... 698

XV. **Obituary:**

Dr. Pearce Bailey—Dr. Andrew W. Hoisholt— Dr. James Woods Babcock—Dr. Charles Edward Doherty—Dr. Alonzo P. Williamson—Dr. Charles Walter Halterman ..... 704

XVI. **Appointments, Resignations, Etc.** ..... 715

XVII. **Index, Volume I** ..... 719

VOL. I. APRIL, 1922 No. 4

AMERICAN
JOURNAL OF PSYCHIATRY

# A PRELIMINARY STUDY OF THE PRECIPITATING SITUATION IN TWO HUNDRED CASES OF MENTAL DISEASE.* †

BY EDWARD A. STRECKER, M. D.,

*Pennsylvania Hospital, Department for Mental and Nervous Diseases.*

## INTRODUCTION.

The thought which prompts this paper is not naive enough to consider it a contribution to the study of etiology of mental disease. With but few striking exceptions and in spite of promising progress, actual and incontrovertible evidence of psychiatric causation is still lacking. This is particularly true of the emotional and schizophrenic psychoses.

We have merely made an effort to formulate some judgment concerning the precipitating situations in 100 cases of dementia præcox and in a similar number of manic-depressive psychoses. The cases were unselected and practically constitute consecutive admissions. We were fortunate in being able to deal with rather complete histories. Usually there were several sources of information; relatives, friends, medical attendants and sometimes the patient.

A situation was considered precipitating when it seemed to have a probable or even vaguely possible influence on the production of the psychosis. The length of time over which it was supposed to have been operative was very liberally interpreted. This was done in order to avoid a faulty cross-section viewpoint and to eliminate the possible error of overlooking slowly unfolding contributory elements. The addition and summation of a number of irritative and recurring difficulties probably reaches or may even exceed in importance the effect of a single dramatic incident.

* Read at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31, June 1, 2, 3, 1921.

† The author is indebted to Miss Harriet Kift for her assistance, particularly in the preparation of the charts.

The precipitating situation was regarded as somatic or psychic when it dealt with organic or psychogenic reasons and somato-psychic or psycho-somatic according to the apparent relative importance of one or the other of these features in a combination case.

A second grouping was significant, important, doubtful, insignificant and absent. We took into account, principally, the intrinsic value of the entire situation and its chronological bearing on the onset of the mental disease. Here, of course, the investigation is open to criticism. What may have appeared significant or important to the author may seem doubtful or even insignificant to another observer. Though we have tried to eliminate bias yet the personal equation cannot be wholly set aside. A physical factor is exceedingly difficult to evaluate and a psychogenic element presents almost insuperable obstacles to sound judgment. For instance, an unfortunate love affair may seem causal in a given instance, yet it cannot be judged only in such a restricted sense, but broadly as to the influence it might exert on the normal, or better still, average man or woman.

## Scope of Investigation.

This study embraces a comparison between 100 manic-depressive psychoses and 100 cases of dementia præcox from the standpoint of the significance of the precipitating situations and a further comparison as to whether the organic or the psychogenic aspects were more emphatic. An attempt has also been made to ascertain how often and how clearly pre-psychotic emotional feelings or tones were carried into the actual attack of mental disease. The length of time over which the situation was operative was considered in its possible relationship to the type of causation (?) and to the diagnosis. When the psychosis recurred the most recent setting was compared to the one which existed before the initial attack. Finally, an effort was made to discover whether the doubtful, insignificant or absent groups contained a higher percentage of patients whose heredity was heavily charged or whose personality was abnormal.

## Summary of Situations.

The actual situations are presented in the following list. In the first column is given the case number and the initials P, S, PS, or SP, indicating respectively psychic, somatic, psycho-somatic, or somatic-psychic:

SIGNIFICANT.

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 1 PS | 1st | In constant fear of drunkard husband who abused and beat her. | Overworked and fatigued to an extreme degree. Weight down to 97 lbs. | No. 1 SP | 1st | Death of brother and favorite aunt. Worry about sick sister. | Appendectomy and kidney operation. Several years of indigestion and dysmenorrhea. Influenza, pneumonia, and pleurisy. Second attack of pneumonia and pleurisy. Exhaustion. |
| No. 2 SP | 1st | Husband a drunkard who abused patient. Very poor. Four small children. | Very poor health. Had arthritis, nephritis, chronic cough (probably tuberculosis) and hyperthyroidism. | ..... | ..... | ..... | ..... |
| No. 3 SP(?) | 2d | Worry about husband's immoral relations with her sister. | Influenza one week before onset. Climacteric. Lacerated and infected pelvis. | ..... | ..... | ..... | ..... |
| No. 4 SP | 1st | Worry about secret illegitimate pregnancy and criminal operation. | A combination of septic infection and an attack of influenza. | ..... | ..... | ..... | ..... |

IMPORTANT.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. 5 PS | 1st | Husband lived with another woman. | Climacteric. | No. 2 S | 1st | ..... | Two surgical operations. Severe influenza followed by toxic state. |

IMPORTANT—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 6 SP | 2d | Had to bear brunt of difficult family situation. Worried about sister's insanity and brother's death. | Post-typhoidal high blood pressure and nephritis. Taught both day and night school and became extremely fatigued. | No. 3 SP | 1st | Husband not congenial. Worried during pregnancy. | An attack of influenza without medical attention. Childbirth succeeded by severe gastro-intestinal symptoms and physical depression. |
| No. 7 SP | 2d | Worry about poverty. Came home from psychopathic hospital to find that her four children had whooping cough. Oldest and favorite child died. | While pregnant developed whooping cough. Reached a point of extreme fatigue nursing infant and four sick children. Practically no sleep. | No. 4 PS | 2d | Husband worthless and probably drug addict. Treated her badly. Child to support. | Two miscarriages. |
| No. 8 SP | 2d | Worried about family. | Always over-worked, often 16 hours daily. Pericarditis; probably tuberculosis; surgical operation and artificial climacteric. | No. 5 SP | 1st | Two unhappy marriages. Poor circumstances. | Severe attack of influenza. |
| No. 9 PS | 1st | Pregnant. Husband unfaithful and alcoholic. Unable to provide for three children. | Ill-health. Fractured, painful coccyx. Surgical operation. | No. 6 SP | 1st | Married foreigner and could not accustom herself to his mode of living. | An instrumental labor. Two attacks of influenza followed by "glandular swellings" and gastric symptoms. |
| No. 10 S | 1st | ..... | A severe attack of toxic influenza with return to work before complete recovery. | No. 7 SP | 1st | Constantly worried about children. Grieved by death of one of them. | Two attacks of erysipelas. Had three children in three years. Overworked nursing sick child. Often up all night. |

IMPORTANT—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 11 S | 1st | ..... | Influenza. Returned to work too soon. Had as sequels—infected throat and ears and abscessed teeth. | No. 8 PS(?) | 1st | Husband ill-treated her. Died and left her penniless. | Difficult, instrumental labor followed by severe hemorrhage. |
| No. 12 PS | 1st | Worried because of illicit sexual relations through which she contracted Neisser's disease. | Fatigued from overwork. Anemic. Probably had infected tubes and ovaries. Automobile accident. | No. 9 S | 1st | ..... | Severe attack of influenza. |
| No. 13 PS | 1st | Worried constantly about her husband who did not support her. He committed suicide a year ago. | Climacteric. Very much run down physically. | No. 10 S | 1st | ..... | Miscarriage. Severe attack of influenza for which patient took "serum treatment" and continued working. |
| No. 14 PS | 1st | After being married for two years, her husband, to whom she was deeply attached, developed tuberculosis and the patient nursed him for 10 years until his death. | Toxic thyroid. | No. 11 S | 1st | ..... | Mild influenza. Childbirth followed by septic infection and nephritis. |
| No. 15 S | 2d | ..... | Always delicate. Diabetes. Her attacks seem to be associated with the presence of dextrose in the urine. Was exhausted and careless of diet. | No. 12 S | 1st | ..... | Influenza. Childbirth two weeks after recovery. Heart and uterine disease. Hemorrhoids and chronic constipation. |

IMPORTANT—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 16 S | 1st | ..... | Secretly taking large doses of thyroid ext. and was subsequently operated on (thyroidectomy) when toxic thyroid symptoms presented. | No. 13 SP | 1st | Greatly shocked when son who was very young announced his intention of marrying. | Climacteric. Influenza. |
| No. 17 SP | 1st | Worried about trouble with school board and hasty resignation. | Pneumonia and returned to teaching before complete recovery. Gastric symptoms, hives, and shingles. | No. 14 SP | 1st | Worry about sick children. | Had three children in 3 yrs. Shortly after last confinement all the children were critically ill and patient lost much weight and sleep. |
| No. 18 SP | 1st | Worried about poor circumstances, death of one child and ill-health of the other children. | Overworked. Severe influenza followed by nephritis. | No. 15 SP | 1st | Disappointed over failure of theatrical career. | Poor hygienic surroundings, insufficient food, overwork, fatigue. Typhoid followed by heart disease. |
| No. 19 PS | 1st | Following death of husband, his mother and an alcoholic son caused her constant trouble and worry and finally defrauded her of her property. | Ill health and climacteric with loss of weight amounting to 30 lbs. | No. 16 SP | 1st | Love affair..... | Severe influenza followed by encephalitic (?) symptoms. |

IMPORTANT—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 20 PS | 2d | Constantly worried and frightened by husband's ill-treatment and his and her mother-in-law's threat to desert her and take the children. Frightened by fire in house. | Ill-health and undernourishment. | No. 17 S | 2d (?) | ..... | Always had dysmenorrhea. Influenza and pleurisy. Attempted to work before she was well. |
| No. 21 PS | 1st | Left alone by death of two sisters and mother. Worried over loss of most of her life's savings. | Overworked nursing two sisters. Worked hard as banker's assistant. | No. 18 PS (?) | 1st | Death of husband. Sudden death of convalescent patient. | Constantly nursed husband who became helpless cripple soon after their marriage. Exhausted physically but took up training course in nursing. |
| No. 22 SP | 1st | Niece died following attempted abortion and this the patient associated with her own self-induced abortion. | Thyroid toxic symptoms. Thyroidectomy. Recurrence of symptoms. Nephritis. Climacteric. | No. 19 S | 1st | ..... | Tremendous amount of overwork, public speaking, etc. Poor food, loss of weight. Anemic. Went to France and contracted influenza. |
| No. 23 SP | 1st | Husband died four years ago and left her destitute with 5 small children. | Very severe toxic influenza. | No. 20 SP (?) | 1st | Husband's neglect. Poverty. | Difficult instrumental labor followed by infections. |
| No. 24 SP | 2d | Worry about a son's secret and ill-advised marriage. | Advanced thyroid disease, heart disease and arteriosclerosis. | ..... | ..... | ..... | ..... |

IMPORTANT—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 25 SP (?) | 1st | Worry because daughter eloped with deformed undersized man who became insane. | Physical exhaustion and heart and kidney disease. | ..... | ..... | ..... | ..... |
| No. 26 SP | 1st | Worried about health and studies. | Overworked first in college then as "phone" operator, at the same time taking many special courses. Poor food. Influenza followed by abscessed teeth and glands. | ..... | ..... | ..... | ..... |
| No. 27 PS | 3d | Nursed mother who died of cancer. Worried about immoral sister. Was alone with this sister when she gave birth to a still-born child; later sister had to have craniotomy performed on child, and patient prepared body for burial. | In early life was physically defective and was ill-treated and neglected. | ..... | ..... | ..... | ..... |

IMPORTANT—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 28 PS | 1st | Unhappy because of enforced separation from husband. Shocked by mother's death. Frightened at finding snake and tarantula in house. Worried by expected uprising of natives (Hayti). | Lost weight and menses became irregular. | ..... | ..... | ..... | ..... |
| No. 29 SP | 1st | Ill-treated by husband. Poor circumstances. | Healed (?) tuberculosis. Two attacks of influenza followed by childbirth. | ..... | ..... | ..... | ..... |
| No. 30 SP | 1st | Neglected by husband. | Influenza while two months pregnant. | ..... | ..... | ..... | ..... |
| No. 31 SP | 2d | Worried because she could not advance herself to a responsible position on account of health. | Surgical operation. Influenza. Climacteric (?). | ..... | ..... | ..... | ..... |
| No. 32 S | 1st | ..... | Never robust. Greatly overworked, first by nursing a paralyzed demented father and later by taking charge of her husband's office and assisting him during the influenza epidemic. Climacteric? | ..... | ..... | ..... | ..... |

DOUBTFUL.

| Manic-depressive. | | | | Dementia præcox | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 33 PS | 2d | Worried about a small growth which she was told might be cancer. | Climacteric. | No. 21 SP (?) | 1st | Anonymous communications to the effect that her husband was unfaithful to her. | Protracted, difficult and instrumental labor. |
| No. 34 PS | 3d | Worried about sudden death of daughter-in-law from post-partum hemorrhage. | Beginning climacteric. | No. 22 PS | 1st | "Nervous" at establishment of menses. Love affair. (?) Frightened by incidents of Mexican revolution. | Mild hyperthyroid symptoms. |
| No. 35 PS (?) | 1st | Death of most intimate friend. | Gradually became exhausted after 20 years of teaching. | No. 23 P | 1st | Death of father..... | ..... |
| No. 36 P | 1st | Shocked when she discovered her daughter had lues. | ..... | No. 24 S | 1st | ..... | Mild influenza. |
| No. 37 PS | 2d | Unhappy love affair. Serious illness of father. | Sub-acute appendicitis and oophoritis. | No. 25 S | ..... | ..... | Appendectomy, oophorectomy. Extreme constipation. |
| No. 38 PS | 2d | Serious illness of mother. | Climacteric. | No. 26 P | 1st | As a child, often frightened by drunken father who abused family. | ..... |
| No. 39 SP | 1st | Worried about son in Navy. Poor circumstances. | Overworked, anemic, tired. | No. 27 P | 1st | Deserted by husband. Planned to marry man who was to secure a divorce for her. | ..... |
| No. 40 PS | 1st | Worry about son with A. E. F. in France. | Climacteric. | No. 28 PS (?) | 1st | Several love affairs.. | Lost weight and strength and had insomnia. |

DOUBTFUL—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 41 P | 3d | Worried because she was anatomically unable to have sex relations and because an operation failed to correct the condition. | ..... | No. 29 PS | 1st | Love affair ending unhappily. | Dysmenorrhea. D. and C. |
| No. 42 P | 1st | Worried about ill-considered and hasty marriage. Later unable to marry man she really loved. Death of patient whom she had nursed for a long time. | ..... | No. 30 PS | 1st | Love affair. Worried about teeth. | Possible tuberculosis. |
| | | | | No. 31 S | 1st | ..... | Mild attack of influenza. |
| No. 43 SP | 1st | Greatly interested in war activities and worried because she was not sent to France. | Gastric ulcer. | No. 32 SP | 1st | Pregnant and worried for fear child might not live. | Normal labor. Nephritis. |
| No. 44 PS (?) | 4th | Sister's death ..... | Overworked. Nephritis. | No. 33 SP | 1st | Father has mental disease, making difficult home situation. | Mild influenza. |
| No. 45 P | 4th | Husband in poor health (gastric carcinoma). Sister had mental breakdown. | ..... | No. 34 PS (?) | 1st | Worried about her parents. | Overworked at mental and industrial nursing. |
| No. 46 PS | 1st | Shock of finding mother unconscious from stroke. | Poor health. Appendectomy. | No. 35 PS | 1st | Assaulted (?) by brother-in-law several years ago. | Normal childbirth. |
| No. 47 SP (?) | 2d | Worried because daughter was away from home. | Beginning climacteric. | No. 36 S | 1st | ..... | Three miscarriages and two D. and C. operations. |

DOUBTFUL—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 48 S | 1st | Worried about school work. | Worked very hard at school; did all the housework and probably had insufficient food. Hyperthyroidism. | No. 37 P | 1st | Monotonous life on farm. Conflict with parents about joining Mennonite religion and wearing garb. | ..... |
| No. 49 PS | 1st | Worried about death of mother and sister and illness of child. | Climacteric. | No. 38 S | 1st | ..... | Suspicious pulmonary tuberculosis. Enlarged glands. Dysmenorrhea. |
| No. 50 PS (?) | 1st | Worried about husband's serious illness and mother's blindness. | Overworked nursing husband. In poor health. Climacteric. | No. 39 S | 1st | ..... | Physically run-down. Gastric symptoms and anemia. |
| No. 51 PS | 2d | Probably unhappily married. Worried because she had not told husband of first attack. | Congenital heart disease. Overworked. | No. 40 PS | 1st | Jealous of husband. | Miscarriages. |
| No. 52 PS | 1st | Worried because she brought on abortion. | Hemorrhage from late abortion. | No. 41 S | 1st | ..... | Pyorrhea and apical abscesses. |
| No. 53 PS | 1st | After nursing mother through fatal illness, her father induced her to keep house for him. He was then dissatisfied and disagreeable. | Climacteric. | No. 42 SP (?) | 1st | Frightened by fire on ocean liner. | Appendectomy. Elevator accident. |
| No. 54 S | 3d | ..... | Probable cancer cervix uteri. | No. 43 PS | 2d | Lived with an eccentric sister. Worried about war news and because she was out of work. | Climacteric. (?) |

DOUBTFUL—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 55 PS | 2d | Jealous of brother's second wife. His marriage left her without a home. | Climacteric. | ..... | ..... | ..... | ..... |
| No. 56 S | 1st | ..... | Mild influenza. | No. 44 PS (?) | 2d | Hindu and had trouble understanding American customs. | Overworked studying medicine. |
| No. 57 P | 2d | Sudden death of husband. | ..... | No. 45 PS | 1st | Death of favorite cousin. Worried during pregnancy and then after childbirth because baby was fretful. | Normal childbirth. |
| No. 58 PS | 1st | Worried about supporting family. Left destitute by husband's death several years ago. | Climacteric. | No. 46 P | 1st | Death of father. Broken engagement. Work interfered with by war. | ..... |
| No. 59 SP | 1st | Worried about pregnancy. | Normal labor followed by slight infection and D. and C. | No. 47 P | 1st | Love affair. Had to give up art studies and live in country to help family. Did not get on with mother. | ..... |
| No. 60 SP (?) | 1st | Fear of pregnancy... | Mild influenza. | No. 48 S | 1st | ..... | Markedly physically inferior from birth. |
| No. 61 P | 2d | Worried about breaking up housekeeping and disposing of business after her husband's death. | ..... | No. 49 PS | 1st | Neglected by husband. (?) | Smoked and drank (?) to excess. |
| No. 62 PS | 1st | Worry about love affair and disappointment in work. | Fatigue and poor appetite. | No. 50 S | 1st | ..... | Fatigue, insomnia, heart disease. Climacteric. (?) |

DOUBTFUL—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 63 PS | 1st | Left without a position at age of 62, after working hard for many years. | Surgical operation. | No. 51 P | 1st | "Was taught masturbation and woman love in Paris." | ..... |
| No. 64 SP | 2d | Worried. | Fatigued. Climacteric. | No. 52 PS | 1st | Death of mother..... | Pelvic adhesions. |
| No. 65 SP | 1st | Financial strain. Socially overactive. | Diabetes. Fatigued. | No. 53 PS | 1st | Death of mother and father within four years. | Early climacteric. |
| No. 66 P | 1st | Worried about husband's infidelity and her own immoral life. | ..... | No. 54 P | 1st | Unhappy marriage... | ..... |
| No. 67 PS | 2d | Nursed an invalid mother for five years. Unhappy, but felt it was her duty. | Climacteric. | No. 55 PS | 2st | Love affair..... | Overstudy. Anemia. (?) |
| No. 68 P | 3d | Worried about money loss and sister's mental breakdown. | ..... | No. 56 SP | 1st | Worried about spiritualism. | Overworked nursing mother and caring for brother's two young children. |
| No. 69 S | 3d | ..... | Surgical operation. | No. 57 SP | 1st | Death of mother..... | Always physically inferior. |
| ..... | ..... | ..... | ..... | No. 58 PS (?) | 1st | Worried about pregnancy and mental disease in family. | Normal labor followed by slight fever. Insomnia and loss of weight. |
| ..... | ..... | ..... | ..... | No. 59 PS | 1st | Worried about child who was a musical prodigy. | Unrepaired infected lacerations of pelvis. |
| ..... | ..... | ..... | ..... | No. 60 S | 1st | ..... | Dysmenorrhea surgical operation and "touch" of pneumonia." |

DOUBTFUL—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| ..... | ..... | ..... | ..... | No. 61 PS | 1st | Death of child in an accident. Jealousy of husband. | Unrepaired pelvic lacerations. |
| ..... | ..... | ..... | ..... | No. 62 P | 1st | Husband would go away for several months at a time, leaving her alone with six children. | ..... |
| ..... | ..... | ..... | ..... | No. 63 PS | 1st | 1st marriage unhappy; 2d husband died, 3d treated her badly. | Over work and climacteric. (?) |
| ..... | ..... | ..... | ..... | No. 64 S | 1st | ..... | Severe dysmenorrhea. Surgical operation. |

INSIGNIFICANT.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. 70 P | 1st | Worry about an immoral sister. | ..... | No. 65 P | 1st | Worry about alcoholic irresponsible husband who died years ago. Worry because rent was raised. | ..... |
| No. 71 P | 2d | Serious illness and death of brother. | ..... | No. 66 P | 1st | Night-terrors ..... | ..... |
| No. 72 P | 3d | Worry about son in A. E. F. | ..... | No. 67 PS | 1st | Disappointed because she had to give up art studies. | Dysmenorrhea. |
| No. 73 S (?) | 2d | ..... | ..... | No. 68 PS | 2d | Worried about responsibilities. | Poor health. |
| No. 74 P | 5th | Love affair..... | ..... | No. 69 PS | 1st | Worry about poverty. | Fell, straining back. |

INSIGNIFICANT—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 75 P | 1st | Worry about financial affairs and unsatisfactory (?) marriage. | ..... | No. 70 PS | 1st | Worry (?) during pregnancy. | Normal labor. |
| No. 76 PS | 1st | Worry about sister's engagement and family responsibility. | Below par physically. | No. 71 P | 1st | Upset by religious revival. | ..... |
| No. 77 S | 1st | ..... | Poor health. | No. 72 P | 1st | Disappointed about love affair. | ..... |
| No. 78 PS | 1st | Employer hard to please. | Lost weight. | No. 73 P | 1st | Worried because daughter had to go to work. | ..... |
| No. 79 PS | 2d | Worried about husband's inability to support her properly. | Run-down. | No. 74 S | 1st | ..... | Insomnia and loss of weight. |
| No. 80 S (?) | 5th | ..... | Head pain. | No. 75 S | 1st | ..... | Normal childbirth. Establishment of menses. |
| No. 81 PS | 1st | Worried during pregnancy. | Easy, spontaneous labor. | No. 76 S | 1st | ..... | |
| No, 82 P | 2d | Financial worry ..... | ..... | No. 77 PS | 1st | Worried (?) about studies. | Nursed mother. |
| No. 83 PS | 1st | Secret love affair.... | Overwork. | No. 78 P | 2d | Worried about her sister's broken engagement. | ..... |
| No. 84 S | 1st | ..... | Normal easy labor. | No. 79 SP | 1st | Frightened by a dream. | Chronic constipation. |
| No. 85 S | 3d | ..... | Physically in poor condition. Insomnia. | No. 80 P | 1st | Jealousy of sister and love affair. (?) | ..... |
| No. 86 PS | 1st | Worried about religion. | Chronic appendicitis. | No. 81 P | 1st | Love affair ..... | ..... |

INSIGNIFICANT—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| No. 87 PS | 6th | Excitement of preparing for daughter's wedding. | Tired. | No. 82 S | 1st | ..... | Invalid. Otitis Media. |
| No. 88 P | 1st | Troublesome ward. Death of friend. | ..... | No. 83 P | 1st | Worried about attentions of employer and about mistake in deposit slip. | ..... |
| No. 89 P | 2d | Jealousy of husband. | ..... | No. 84 S | 1st | ..... | Fatigued. |
| No. 90 P | 11th | Dissatisfied with daughter. | ..... | No. 85 P | 1st | Jealousy of husband and worry about sister's love affair. | ..... |
| No. 91 PS | 2d | Worried about moving. | Very slight thyroid symptoms. | No. 86 PS | 1st | Worried. | Overworked. (?) |
| No. 92 P | 2d | Jealous of husband's secretary. | ..... | No. 87 P | 1st | Worried because husband was salesman and had to be away from home. | ..... |
| No. 93 S | 1st | ..... | Irregular and painful menses. | No. 88 S | 1st | ..... | Normal easy childbirth. |
| No. 94 S | 1st | ..... | Anemia. | ..... | ..... | ..... | ..... |
| No. 95 S | 5th | ..... | Bronchitis. | ..... | ..... | ..... | ..... |
| No. 96 SP | 1st | Financial worry. (?) | Poor health. | ..... | ..... | ..... | ..... |
| No. 97 P | 1st | Worry about uncle's death. | ..... | ..... | ..... | ..... | ..... |
| No. 98 PS (?) | 1st | Psychic effect of "Twilight sleep" labor. | ..... | ..... | ..... | ..... | ..... |

INSIGNIFICANT—(CONTINUED).

| Manic-depressive. | | | | Dementia præcox. | | | |
|---|---|---|---|---|---|---|---|
| Case No. | No. of attack. | Psychic. | Somatic. | Case No. | No. of attack. | Psychic. | Somatic. |
| ABSENT. | | | | | | | |
| No. 99 | 21st | ..... | ..... | No. 89 | 1st | ..... | ..... |
| No. 100 | 2d | ..... | ..... | No. 90 | 1st | ..... | ..... |
| ..... | ..... | ..... | ..... | No. 91 | 1st | ..... | ..... |
| ..... | ..... | ..... | ..... | No. 92 | 1st | ..... | ..... |
| ..... | ..... | ..... | ..... | No. 93 | 1st | ..... | ..... |
| ..... | ..... | ..... | ..... | No. 94 | 1st | ..... | ..... |
| ..... | ..... | ..... | ..... | No. 95 | 1st | ..... | ..... |
| ..... | ..... | ..... | ..... | No. 96 | 1st | ..... | ..... |
| ..... | ..... | ..... | ..... | No. 97 | 4th | ..... | ..... |
| ..... | ..... | ..... | ..... | No. 98 | 1st | ..... | ..... |
| ..... | ..... | ..... | ..... | No. 99 | 1st | ..... | ..... |
| ..... | ..... | ..... | ..... | No. 100 | 1st | ..... | ..... |

## General Considerations.

It may be interesting to make a general survey of the precipitating situations without respect to the type of mental disease involved. According to their assigned value 5 were significant, 47 were important, 81 were doubtful, 53 were insignificant and in 14 patients a careful study of the anamnesis failed to reveal even a trivial reason for the mental breakdown. When the component elements of all the situations were analyzed it was found that in 107 there was combination of psychic and organic factors, the former predominating in 65 and the latter in 42. In 40 the psychoses seemingly followed somatic disturbances alone and in 39 the prepsychotic circumstances apparently were solely psychic.

The concrete situations in which the psychic element either stood alone or was emphasized, were, of course, very numerous and represented all the difficulties and troubles which ordinarily fall to the lot of humanity. Thus, we had to consider the mental effect of cruelty, poverty, marital infidelity, sexual assault (?), illegitimate pregnancy, undue responsibility, illness and death of husband, parents, children, other relatives or friends, unhappy marriage, illicit sexual relations and pregnancy, financial reverses, failure in the struggle for success, love affairs, jealousy, self-induced abortion, neglect and fright and fear precipitated by various agencies. Cruelty, poverty, illness, death of relatives, and unhappy love affairs were the most frequent factors.

There is very little to be gained by placing on paper all these psychic problems. Unless we have an accurate picture of the setting of the case and until we can gauge the mental resistance of the individual, we will be unable to correctly evaluate the psychogenesis of mental disease. We are dealing with something which cannot be weighed—a true imponderable. For instance, the death of a husband is a life incident which many women must meet. Under ordinary circumstances and presupposing a normal woman, we may anticipate a period of grief followed by a resumption of social life with its assuaging routine duties and new interests. But let us suppose that the husband's death is suicidal, that the wife is at the beginning of the climacteric and must face the world handicapped by the triple burden of broken health, poverty, and dependent children. The death of the husband is a simple, understandable fact, but the gravity of the situation which is thereby produced and

the ability of the individual to mentally withstand the strain and adjust are two things which cannot be measured, chiefly because they must vary in each instance.

The somatic situations were as varied as the psychic. Influenza, overwork and fatigue, childbirth, instrumental labor and the climacteric, tuberculosis, gastric ulcer, arthritis, heart and kidney disease, hyperthyroidism, whooping cough, pneumonia, diabetes, pleurisy, anemia, erysipelas, pericarditis, arteriosclerosis, hives, shingles, infected pelvis, chronic appendicitis and oöphoritis, septic infection, miscarriage, surgical operation, establishment of menses, dysmenorrhea, fracture, indigestion, hemorrhoids, chronic constipation, etc. Influenza which was present in 28 patients, overwork and fatigue, the menopause and childbirth were most often repeated. When we attempt to weigh these factors, our psychiatric scales are once more found to be defective. Only occasionally is the relationship to the psychosis direct and when it is less obvious we dare not assume that no connection at all exists. To invoke the fetich of the so-called psychopathic inheritance or tendency is only dodging the question. Everyone knows that such a tendency exists, but may we assume that every human being who is so handicapped will develop mental disease and that vice versa the mythical normal individual necessarily has such a strongly reinforced nerve resistance that it will easily turn aside every conceivable mental or somatic thrust?

## Comparison of Situations.

Chart 1 compares the intrinsic values (as they appealed to the author) of the situations in the psychoses which were studied.‡ Significant and important may be considered together. In manic-depressive insanity the histories of 32 patients showed serious and sometimes overwhelming pre-psychotic mental and physical problems. The same was true of fewer schizophrenics—namely, 20. Of the manic depressives 37 were doubtful and 29 "insignificant," of the schizophrenics 44 and 24, respectively. The most striking difference is found in those patients whose life gave no objective evidence of either psychic or physical strain. Thus, "absent" could be applied to only 2 of the manic depressives and in neither of these were we dealing with initial attacks, while in 12 of the dementia præcox group no trace of any previous stress could be uncovered.

‡ See footnote, p. 525.

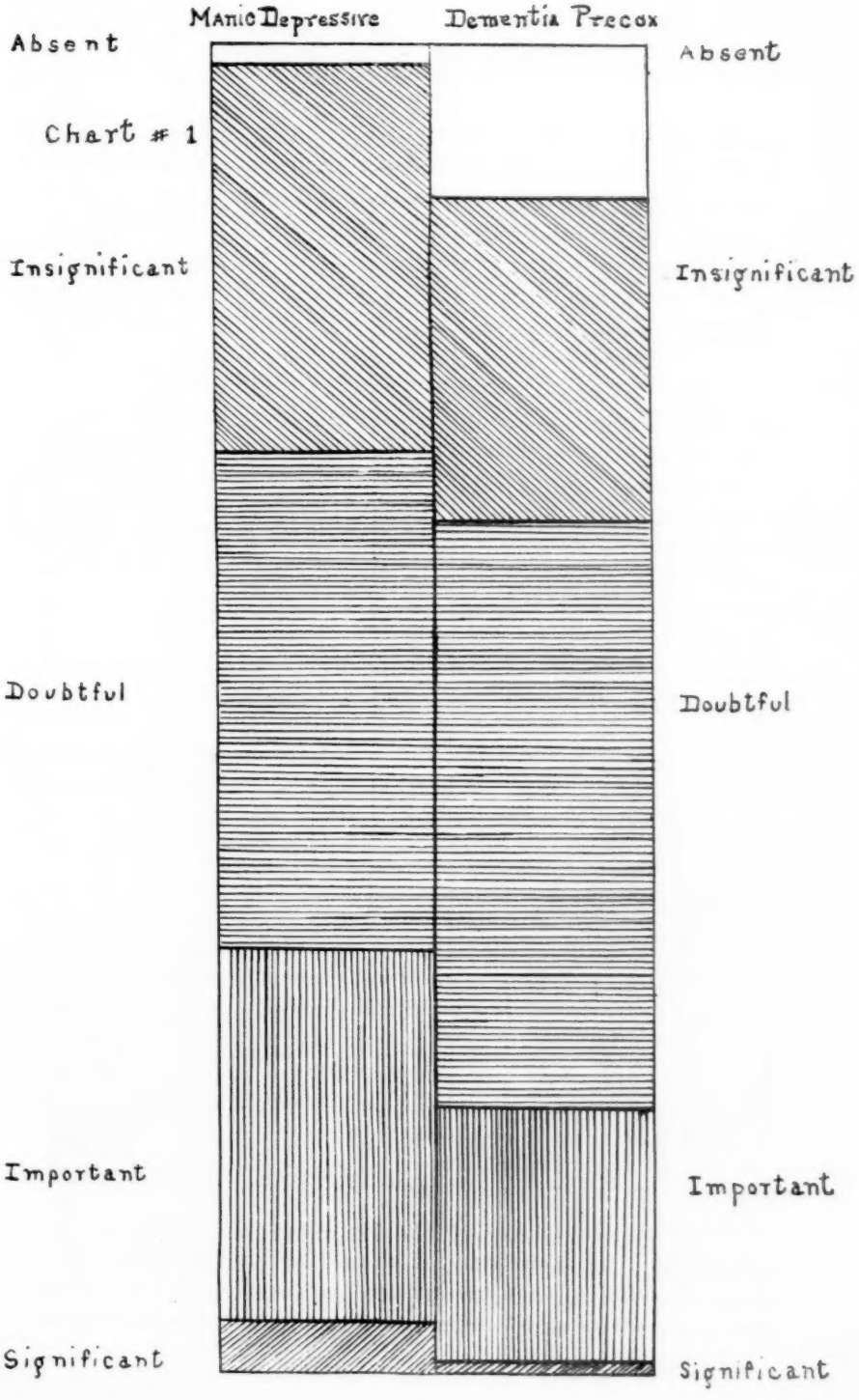
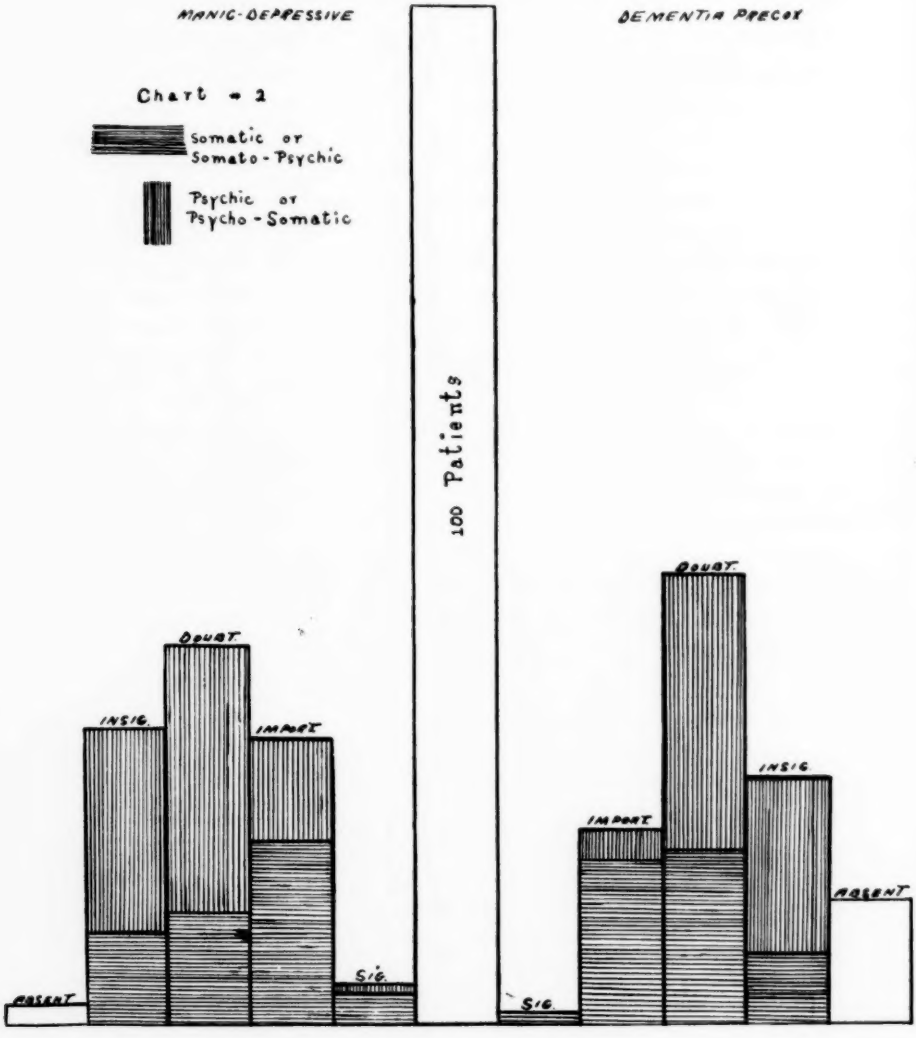

Manic Depressive
Dementia Precox
Absent
Absent
Chart # 1
Insignificant
Insignificant
Doubtful
Doubtful
Important
Important
Significant
Significant

Chart 2 again contrasts the two kinds of mental disease and also attempts to give some idea concerning the frequency of psychic and




organic elements. In this respect the manic depressives and the schizophrenics were strikingly comparable. In the former psychosis, among the 32 significant and important situations, there were 21 in which organic disease was more emphatic than mental

insult and this also held for 17 of the 20 patients who developed dementia præcox. In the doubtful and insignificant groups we see a sharp decline in the significance and frequency of somatic factors. Of the manic-depressive doubtfuls 26 were psychic and 11 somatic; of the insignificants 20 and 9 respectively. This is in fairly close agreement with the schizophrenic: "doubtful," psychic 27, somatic 17; "insignificant," psychic 17, somatic 7.

### The Affect of the Precipitating Situations.

An effort was made to ascertain how often and how definitely pre-psychotic emotional feelings were carried into the actual attack of mental disease. If it can be demonstrated that the affect which existed and was produced by the precipitating situation and which was at first essentially physiological was brought into the psychosis as a pathological and sustained emotional reaction, we have a possible argument in favor of the seriousness of the pre-existing circumstances. This may be illustrated by a concrete example. A woman of 40, married at the age of 25. There were five small children. Her husband, a drunken brute, who afterward committed suicide, always abused and frequently struck her. She lived in *poverty,* worked tremendously hard, was fatigued and lost flesh until she finally weighed only 97 pounds. For 15 years this patient was in a state of constant *fear,* and hopeless *worry* and *depression.* When her husband learned that probably she was again pregnant, he was particularly vicious in his treatment. Following this scene, the *psychosis made its appearance.* It was marked by an *intense fear reaction, agitated depression* especially referred to her children and repeated expressions of wretched poverty. It is, of course, realized that the psychotic content is influenced by incidental episodes, but when an emotional tone which existed previously is clearly transferred into the psychosis and actually constitutes the symptomatic picture, it is extremely likely that we are apt to find significant or important exciting factors.§ Of the manic-depressive

§ Our group of cases may be too small to be conclusive about this point. Not infrequently we meet a complete reversal of the pre-psychotic emotional state, seemingly a compensatory mechanism. Sometimes, there is a curious commingling of affect. Thus, a patient who apparently was passing through a pure manic episode had very brief periods of irritable depression, and at such times the motif of her productions was her husband's marital infidelity.

group of 32 significant and important situations 20 or 62.5 per cent showed an extension of the pre-psychotic affect into the mental illness, but this was true in only 8 or 21.6 per cent of the doubtful and in none of the insignificant class. A similar condition was found in only 10 schizophrenics; 6 or 30 per cent relating to "important," 2 or 4.5 per cent to "doubtful," and 2 or 8.3 per cent to "insignificant." While dementia præcox is not essentially an affective psychosis, yet the earlier stages and milder types not infrequently reveal strong emotional currents, so that such an analysis is not entirely without reason.

### Duration of Precipitating Situations.

The length of time over which exciting factors were active and exerted their effect was studied. Of the manic-depressive patients only 12.5 per cent of the significant and important groups had to contend with difficulties which had existed less than one year; 40.5 per cent of the doubtful and 45 per cent of the insignificant. In dementia præcox the figures for the same three classes were respectively 25 per cent, 21 per cent, and 46 per cent. Thus an important precipitating situation is apt to have a longer duration than a questionable or trivial one. In one sense this means that in the production of a psychosis an accumulation of mental and physical strain or both may often exceed in importance a simple dramatic episode.

### Precipitating Situations in the Recurrences.

Of the manic-depressive psychoses there were 42 second or more frequent attacks, distributed as follows: In the significant group, one second attack or 25 per cent; in the important, seven second and one third attack or 28.6 per cent; in the doubtful, ten second, five third and two fourth attacks or 45.9 per cent; in the insignificant, seven second, two third, three fifth, one sixth, and one eleventh attack or 48.3 per cent; and in the absent, one second and one twenty-first attack or 100 per cent. It is evident that there was a steadily progressing increase in the number of repeated attacks as the intrinsic value or seriousness of the precipitating factors declined. It may be interesting to compare the situations in the

recurrences with those which existed at the initial mental disturbance. The following tables supply this information:

SIGNIFICANT.

| | |
|---|---|
| *2nd attack:* Marital infidelity, climacteric, influenza, lacerated and infected pelvis. | *1st attack:* Marital infidelity. |

IMPORTANT.

| | |
|---|---|
| *2nd attack:* Undue responsibility, worry, overwork, and exhaustion, post-typhoidal complications. | *1st attack:* Practically the same. |
| *2nd attack:* Poverty, worry about sick children, death of favorite child, pregnancy, whooping cough, extreme fatigue. | *1st attack:* Poverty, fatigue, worry, birth of fourth child. |
| *2nd attack:* Overwork, fatigue, pericarditis, tuberculosis, surgical operation, climacteric. | *1st attack:* Overwork, fatigue, tuberculosis. |
| *2nd attack:* Physically depleted, diabetes, carelessness in diet. | *1st attack:* Same. |
| *2nd attack:* Cruelty and poor health. | *1st attack:* Cruelty. |
| *2nd attack:* Worry, thyroid and heart disease and arteriosclerosis. | *1st attack:* Sudden death of grandson, climacteric, heart disease and arteriosclerosis. |
| *3rd attack:* Worry about immoral sister and shocked when she witnessed birth of still-born child and later craniotomy for second illegitimate child. | *1st attack:* Death of mother. |
| *2nd attack:* Poor health, failure in work, influenza, surgical operation, climacteric. | *1st attack:* Overwork and poor health. |

DOUBTFUL.

| | |
|---|---|
| *2nd attack:* Fear of cancer, climacteric. | *1st attack:* Miscarriage. |
| *3rd attack:* Sudden death of daughter-in-law, climacteric. | *1st attack:* "Nervous." |
| *2nd attack:* Unhappy love affair, illness of father, appendicitis and oöphoritis. | *1st attack:* Ovarian trouble. |
| *2nd attack:* Serious illness of mother, climacteric. | *1st attack:* Serious illness of two cousins. |
| *3rd attack:* Anatomically unable to have sexual intercourse. | *1st attack:* Worry about marriage. |

| | |
|---|---|
| *4th attack:* Sister's death, overwork, nephritis. | *1st attack:* Overwork and worry. |
| *4th attack:* Husband's poor health, sister's mental breakdown. | *1st attack:* No cause known. |
| *2nd attack:* Worry because daughter went away, climacteric. | *1st attack:* No cause known. |
| *2nd attack:* Unhappy marriage, congenital heart disease, overwork. | *1st attack:* Broken engagement, poor health. |
| *3rd attack:* Cancer (?) cervix uteri. | *1st attack:* No cause known. |
| *2nd attack:* Jealousy brother's wife, no home, climacteric. | *1st attack:* No cause known. |
| *2nd attack:* Sudden death of husband. | *1st attack:* Death of sister. |
| *2nd attack:* Death of husband breaking up of household, financial worry. | *1st attack:* Climacteric. |
| *2nd attack:* Worry, fatigue, climacteric. | *1st attack:* Normal childbirth. |
| *2nd attack:* Nursing an invalid mother from sense of duty, climacteric. | *1st attack:* Unhappy love affair. |
| *3rd attack:* Financial trouble, sister's mental breakdown. | *1st attack:* Unhappy love affair. |
| *3rd attack:* Surgical operation. | *1st attack:* Normal childbirth. |

INSIGNIFICANT.

| | |
|---|---|
| *2nd attack:* Serious illness and death of brother. | *1st attack:* Pan-hysterectomy. |
| *3rd attack:* Worry about son in A. E. F. | *1st attack:* Influenza. |
| *2nd attack:* Climacteric. | *1st attack:* Death of daughter. |
| *5th attack:* Love affair. | *1st attack:* No cause known. |
| *2nd attack:* Poor circumstances, run down physically. | *1st attack:* Pregnancy. |
| *5th attack:* Head pain. | *1st attack:* No cause known. |
| *2nd attack:* Financial worry. | *1st attack:* No cause known. |
| *3rd attack:* Poor physical health, insomnia. | *1st attack:* Serious illness of husband, fatigue. |
| *6th attack:* Preparing for daughter's wedding, tired. | *1st attack:* Gastroptosis. |
| *2nd attack:* Jealous of husband. | *1st attack:* Same. |
| *11th attack:* Dissatisfied with daughter. | *1st attack:* Childbirth. |
| *2nd attack:* Worry about moving, hyperthyroidism. | *1st attack:* Business failure. |
| *2nd attack:* Jealous of husband's secretary. | *1st attack:* No cause known. |
| *5th attack:* Bronchitis. | *1st attack:* No cause known. |

| | |
|---|---|
| *21st attack:* No cause assigned. | *1st attack:* Childbirth. |
| *2nd attack:* No cause assigned. | *1st attack:* No cause known. |

It will be noted that in all but three of the significant-important group the precipitating circumstances of the initial attack had about the same weight as those which existed before the recurrences which were studied. In other words, we were dealing with a situation which was not only serious but was *not corrected*. The years which intervened between the separate periods of the psychosis only served to produce added factors and to intensify those which already existed.

In the doubtful class the character of pre-existing problems in later attacks was much the same as in the original mental disturbance. There was a difference in kind but scarcely in degree. The same holds true for the insignificant and absent categories, with one possible exception in which the onset of the primary psychosis was preceded by influenza.

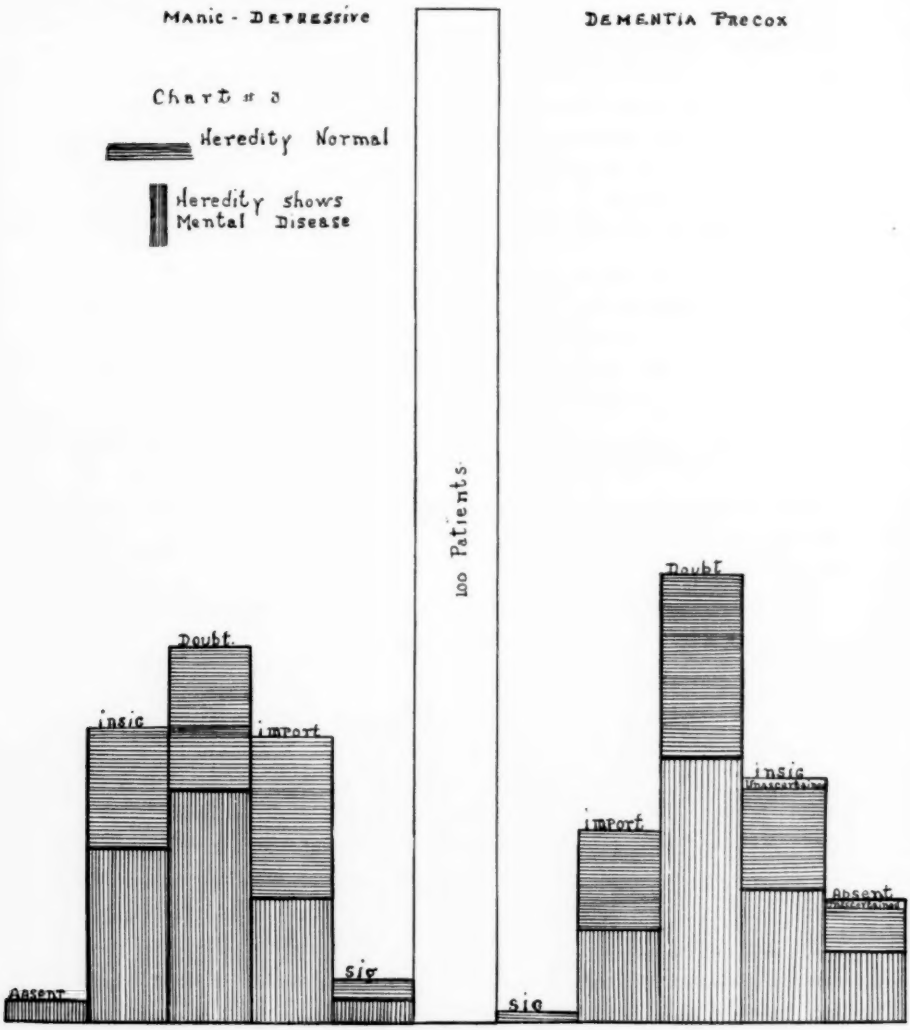
It may be worth while mentioning that while in the significant-important cases there is only listed a single third attack, under the doubtful-insignificant-absent headings we meet seven third, two fourth, three fifth, one sixth, one eleventh and one twenty-first separate episodes.

The number of distinct recurring attacks in the dementia præcox patients was too small to be studied statistically.

## Heredity.

Chart 3 indicates the result of the heredity study. When the direct ancestry (either parent) showed outspoken mental disease or when the more remote or collateral relationship (grandparents, uncles, aunts, first cousins) was heavily charged, the heredity was considered psychotic. In the significant-important group where we were dealing with predisposing situations of considerable magnitude, the family history of insanity in the manic-depressive psychoses amounted to 43.75 per cent and in dementia præcox to 45 per cent; in the doubtful group it was 62.2 per cent and 59.1 per cent respectively; in the insignificant 58.6 per cent and 56.5 per cent and in the absent 100 per cent and 63.6 per cent. In the emotional psychoses the psychotic inheritance was increased more than 18 per

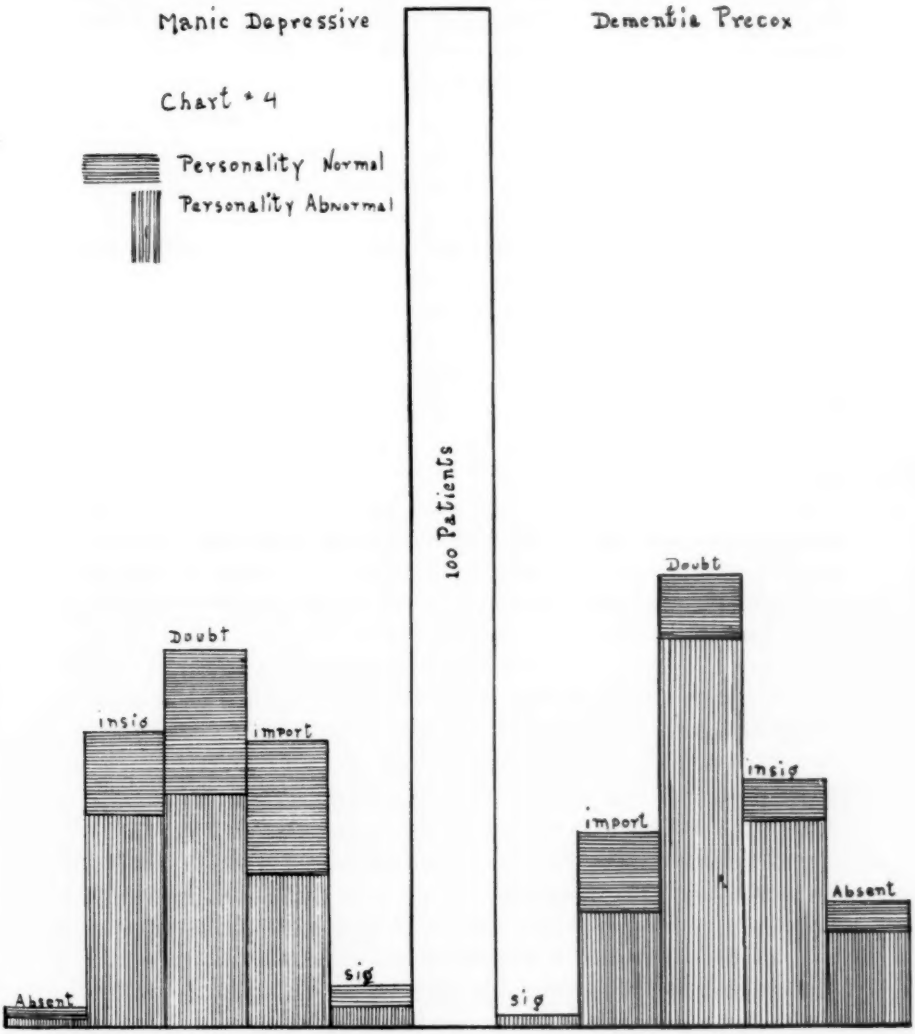
cent when we had to do with ill-defined or trivial pre-existing physical and mental problems or when none at all existed, and in schizophrenia the difference amounted to almost 14 per cent. It




seems to be indicated (as might, indeed, be expected) that the more defective the familial stock, the less likelihood there is of finding serious extraneous factors in the histories of mental patients.

## Personality.

In Chart 4 the personalities of the patients are contrasted. Our interpretation may have been too rigid but only 59 of the entire 200




had a normal make-up and 38 of this number belonged to the manic-depressive psychoses. If we compare the two types of mental disease we obtain the following percentages: Manic-depres-

sive, " significant-important " showed defective personality in 53.1 per cent, dementia præcox in 60 per cent; manic-depressive, " doubtful " in 62.7 per cent, dementia præcox in 86.3 per cent; manic-depressive, " insignificant " in 72.4 per cent, dementia præcox in 83.3 per cent; manic depressive, " absent " in 50 per cent, dementia præcox in 75 per cent.

In manic-depressive insanity the occurrence of an imbalanced personality was more than 13 per cent more frequent in those patients whose illness came on without an adequate precipitating situation and in dementia præcox it was under 24 per cent more common.

In manic depressives an emotionally unstable temperament was found five times (17.8 per cent) in the important group, ten times (27 per cent) in the doubtful and nine times (31 per cent) in the insignificant. In schizophrenia, a classical shut-in personality appeared once in the significant situations, once (0.5 of 1.0 per cent) in the important, nine times (20.4 per cent) in the doubtful, three times (12.5 per cent) in the insignificant and four times (33.3 per cent) in the absent.

Reviewing a smaller group of cases, Bond [1] reported normal prepsychotic personal characteristics in 90 per cent of the manic depressives but only in 29 per cent of dementia præcox, Hoch's [2] findings for the latter psychosis were 40 per cent to 50 per cent abnormal.

## Literature.

In the present state of our psychiatric knowledge we cannot have final conceptions concerning the genesis of mental disease. There are still two distinct viewpoints, though both of them have been much modified. Hoch [3] felt that physical illness was a probable etiological factor in 24 per cent of his manic-depressive patients. Several of his conclusions are in accord with our own; namely, that there are two important groups, first those who possess a cyclothymic constitution and those in whom the outbreak appears to be accidental; when initial attacks have little or no cause (?) subsequent ones likewise present trivial precipitating circumstances or none at all; the accidental group is largely made up of normal individuals, and finally influenza was frequently found as a prepsychotic element. Buckley [4] is impressed with the significance of infection and exhaustion resulting from physical disease as an

exciting cause. Although the mechanism of the various preliminary steps remains uncertain, the end result is exclusively organic, "an inability on the part of the cell to continue in reaction" (Verworn). Psychic exciting factors are considered relatively unimportant. On the other hand, Rosanoff [5] could not support this theory. In 202 cases of dementia præcox he found physical exciting causes in 26 and psychical in 35; in 148 manic depressives, organic in 8 and mental in 51. The most frequent somatic factors were alcoholism, pregnancy, childbirth, lactation, traumatisms, surgical operations, influenza, and typhoid. The most common psychic insults were financial trouble, illness or death of relatives, sexual episodes and domestic difficulties. Combinations of precipitating elements in a single situation were only encountered in nine cases; dementia præcox one and manic depressive eight. The bulk of the cases, 520 or 66.9 per cent, were without assigned causes. This proportion is too large, but it may be probably explained by the fact that the investigation was carried on in a large public hospital where deficiencies in histories are unavoidable. Rosanoff felt that the "power possessed by the acute infectious diseases of producing insanity is at most slight and wholly questionable." The apparent considerable mental morbidity of influenza indicates that infectious diseases may have a more important rôle in the production of psychotic states. In our experience influenza was a prominent factor in 25 per cent of the cases. Harrington [6] states that a "psychosis is the patient's reaction to some experience or series of experiences to some situation in which he has been placed." While Jung [7] concedes the organic possibility of dementia præcox, it is to him largely a question of psychological motives, both in its onset and development. In a brilliant essay Wechsler [8] defines mental disease as "the tribute society is compelled to pay to the individual for having levied on his ego for the formation of a social organism" and he claims that it and its symptoms "can be reduced to terms of loss or disturbance of the normal balance between the primary emotions, and that this loss or disturbance called insanity is the direct result of the struggle between the individual and the species." Two diametrically opposed viewpoints are represented by Cotton,[9] who places heavy emphasis on focal infections, or by the statement selected from Bandler's [10] text book, "dementia præcox is a serious and extreme type of endocrine aberration or abnor-

mality evidencing its presence by psychic rather than somatic alterations," and the school of Freud, which stresses the subconscious psyche.

This is not the place to revive the ancient argument between the adherents of psychogenesis and somatogenesis. However, it may be permissible to express two personal beliefs. First, that even if future research succeeds in bringing to light single definite etiological agents for mental diseases, yet we will not be able to escape the doctrine of multiplicity of causes. The disease tuberculosis is primarily determined by the bacillus of Koch, yet without predisposition and incidental favoring conditions its mere presence will not be followed by pathological results. Paresis is indisputably due to the spirochæta, yet its occurrence is the combined effect of this specific organism plus inherent and extraneous exciting factors. Second, we cannot conceive that mental disease is ever a pure functional expression, neither antedated, accompanied nor succeeded by related ephemeral or permanent somatic changes. This would constitute too sweeping a disregard of data accumulated by clinical observation and physiological and bio-chemical experimentation.

## Conclusions.

1. The number of cases is too small to permit positive conclusions and a margin of error must be taken into account.

2. A significant or important precipitating situation occurred in 52 or more than 25 per cent of the patients. Influenza, overwork, and exhaustion, the climacteric, and complicated childbirth were the most frequent somatic factors; the most common psychic problems were cruelty, poverty, illness and death of relatives, and unhappy love affairs.

3. Significant and important exciting factors were more frequent by 12 per cent in manic-depressive psychosis; there was little difference between the two forms of mental disease in the doubtful and insignificant groups, but the absence of favoring circumstances was six times more frequent in schizophrenia.

4. The proportion of somatic and psychic features was practically the same for manic depressive and dementia præcox; the somatic predominating in the significant and important situations; the psychic in the doubtful and insignificant ones.

5. An extension of the pre-psychotic emotional tone into the psychosis was noted in manic depressive in 62.5 per cent of the significant-important situations, but only in 21.6 per cent of the doubtful and in none of the insignificant. The same held true for 30 per cent of the schizophrenics having important exciting factors, but only in an extremely small percentage of the doubtful and insignificant groups.

6. There was a tendency for adequate precipitating situations to be of longer duration than inadequate ones. This was especially true in manic-depressive insanity.

7. In manic-depressive psychosis when the initial attack had serious exciting factors, later attacks were apt to show the same type of apparent causation. When only questionable or trivial reasons existed for the repeated episodes the original onset was also characterized by doubtful or inadequate pre-psychotic situations. An overwhelming majority, 78.6 per cent, of the recurrences appeared in the doubtful, insignificant and absent groups.

8. The proportion of normal heredity was considerably higher when we were considering serious precipitating circumstances both in manic depressive and dementia præcox. The difference was respectively 18 per cent and 14 per cent.

9. An abnormal personality occurred with greater frequency in those patients whose mental illness came on without adequate exciting factors. The percentage difference was 13 per cent for manic depressive and 24 per cent for schizophrenia.

10. Much valuable information may be gained by a consistent and thorough analysis of the pre-psychotic history.

## BIBLIOGRAPHY.

1. Earl D. Bond: "Personality and Outcome in Two Hundred Consecutive Cases." American Journal of Insanity, LXIX, No. IV, April, 1913, p. 731.
2. August Hoch: "Constitutional Factors in the Dementia Præcox Group." Rev. Neur. and Psychiat. VIII, p. 463.
3. Theodore A. Hoch: "A Statistical Study of Manic-Depressive Insanity With Especial Reference to Physical Illness as an Etiological Factor." Am. Jour. of Insan., LXIX, No. 11, October, 1912, p. 419.
4. Albert C. Buckley: "The Basis of Psychiatry." J. B. Lippincott Co., 1920, pp. 116 and 131.
5. A. J. Rosanoff: "Exciting Causes in Psychiatry." Amer. Jour. of Insan., LXIX, No. 11, October, 1912, p. 349.

6. M. A. Harrington: "Mental Disease Considered as a Psychological Reaction." Mental Hygiene N. H., 1919, II, pp. 220-229.
7. C. G. Jung: "On the Problem of Psychogenesis in Mental Disease." Proceedings Royal Society Medical, London, 1918-1919, XII, Sect. Psychiat. 63-76.
8. I. S. Wechsler: "The Rôle of the Emotions in the Genesis of Insanities and Insanity From the Standpoint of Evolution." Jour. Abnorm. Psychol. Boston, 1917-18, XII, pp. 375-389.
9. H. A. Cotton: "The Rôle of Focal Infections in the Psychoses." Jour. Nerv. and Ment. Diseases, 1919, XLIX, pp. 117-207 and N. Y. Med. Jour., 1919, CIX, pp. 397-454.
10. Bandler: Text-book, "The Endocrines." W. B. Saunders Co., 1920, p. 59.

# ON THE NATURE OF THINKING DISORDER.*

By F. L. WELLS, Ph. D.,
*Psychopathic Hospital, Boston, Mass.*[1]

A recent traveller from the Utopians has described a system of taxation among them based upon the use of language out of its proper and reasonable meaning. If anyone discourses upon a word for which he cannot give a right meaning, he is subject to a graded series of penalties, and these form a large item in the revenues of the state.

It is not mentioned that they have psychiatrists in Utopia, but one needs no highly colored imagination to sense how such limitations would have altered the growth of psychiatry among us. It would hardly be necessary to offer this paper—it might not be possible.

The term "thinking disorder," whose use synonymously with thinking difficulty should be very profitable to Utopian tax-gatherers, appears to be a rendering of the Kraepelinian *psychische Hemmung* or *Denkhemmung* used to denote a symptom especially characterizing the Kraepelinian Manic Depressive Depression. Kraepelin himself does not affect this concept so much as the more behavioristic *psychomotorische Hemmung*. He says:

> The force and quickness with which a voluntary impulse is converted into action, is dependent not only on its own strength, but on the resistances it has to overcome. Thus we know that fear and fright may oppose hindrances to the carrying out of our purposes, which we can only overcome by the greatest efforts of will. Such an increase of resistances, a psychomotor *Hemmung*, is perhaps the most important primary symptom in certain depressive conditions of circular psychosis. Such patients are incapable

* Read at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31, June 1, 2, 3, 1921.

[1] The original experimental work is from the psychological laboratory of McLean Hospital. In the preparation of statistical data involved, a considerable part has been borne by Dr. C. M. Kelley and Mr. Gardner Murphy, then of McLean Hospital, and by Miss Madge Kennedy of Radcliffe.

of the simplest decisions, must laboriously rouse themselves to every action, cannot speak freely, but only with monosyllabic responses. Thus there naturally arises a marked slowing and weakening of action. Only very habitual activities can occasionally be carried on without resistance; sometimes also a violent emotional shock may suddenly break through them. As a rule it can also be shown, that under continual effort, the resistance gradually lessens. In severe cases, independent voluntary action may be almost abolished. In spite of all visible effort the patient cannot get out a word, is unable to eat, to get up or dress. Regularly they are quite sensible of the tremendous weight that lies on them, and which they are not able to overcome.[2]

In this there is no formulation of a specific thinking disorder or difficulty. The difficulty is figured as residing in the conversion of the thought process into its voluntary motor expression. Elsewhere, however, he says of the depressions:

The exact opposite of the flight of ideas appears to be constituted by *Denkhemmung,* which we observe in greater or less development almost always in depressions, also in certain manic-stuporous mixed states and in manic conditions related thereto. The patient shows an inability, often painfully evident to himself, to command his own ideas as he wishes. As it appears, the individual ideas develop slowly and only under strong stimulus. Accordingly, an impression does not arouse quickly and automatically a number of associations, among which it is necessary only to make an appropriate choice. Association takes place rather according to the content of the idea, than according to its external, auditory or vocal relationships. Often absolutely nothing occurs to the patient, and the stream of thought must be carried on with extreme voluntary effort. Thus arises a special difficulty and slowing of thought, lack of reflection in the answering of simple questions, lack of comprehension, poverty of ideas. "I can't think any more, cannot imagine anything more, not put my mind on anything any more, my head is empty," thus patients complain. . . . . Sometimes one also hears the complaint that all mental images are colorless and faint, that they can no longer call to mind the impression of an event in their lives, of a landscape, a painting, or their intimates. They know well how these things look, and can describe them, but the sensory coloring of the memory image is lost.[3]

Attention is here directed especially to the remarks concerning the speed of the mental processes. This was the essence of the term "psychomotor *retardation*" as a rendering of Kraepelin's *Psychomotorische Hemmung,* but instead of psychic retardation, it has been more customary to speak of "thinking disorder" or

[2] Kraepelin, 8 ed. 1, 371-2.
[3] Kraepelin, 8 ed. 3, 1198.

"thinking difficulty." The former of these terms is analogous to stomach disorder as an equivalent of appendicitis, or the conventional meaning of immorality. The symptom is a disorder of thinking, but many other disorders of thinking do not superficially resemble it. If this is the psychic side of a psychomotor retardation, it connotes a *slowing* of the thought process; the mental analogue of what is readily observable in the overt conduct of these cases, as though the stream of thought were actually more sluggish. One cannot say with certainty that anyone has thought exactly this. It is not easy to name something that has been thought exactly about it.

There is often an obvious slowing in the carrying out of the ordinary behavior patterns. Such responses may involve sense perceptions, almost certainly involve some associate elaboration, and finally the conversion into motor action. Ordinary experimental technique is most concerned with voluntary responses. The rate and force of such responses were early studied with Kraepelin's writing balance. The ergograph work, and that on reciprocal innervations measured experimentally a special characteristic of this psychomotor retardation, namely, its lessening under stimulus. The experiments made with the ordinary tapping test are perhaps, so far as mental adjustments are concerned, the simplest form of voluntary response it is possible to measure experimentally. This function is unquestionably slowed in the depressions as a group, with occasional marked lifting of the inhibitions during the experiment.

A step higher in the scale is the simple reaction time. This involves a definite though simple mental readjustment for each new reaction process. In McLean material the reaction time of depressions is found to average longer than normal, but the excited group is slower still, and the time is also longer in other psychoses, such as general paralysis. The observations on this point are not wholly in agreement, except as showing lengthening in the depressions. Other investigators, particularly Diefendorf and Dodge, have found shorter time in excitements, but the observations are much fewer than those here reported. There is nowhere a slowing of the process so great or so constant as to be of differential significance for the psychology of the depressive condition.

The next more complex process to have been observed with this type of material, is perhaps the Kraepelin addition test. Outside of manic-depressive and traumatic material, its pathology is little studied. Low efficiency and great fatigability have been observed in traumatic cases. Manic cases show slower fatigue loss and equal performance, depressed cases slower fatigue loss and poorer performance. The latter is the typical retardation phenomenon, but this experiment involves a considerable motor factor, as the response must be spoken or written. In the above cases they were written. The whole process is unquestionably slowed, and the progressive gain is a characteristic manic-depressive phenomenon, but this may be determined by the motor element in the test rather than by the exercise of mental functions.

When the individual is given a word as a stimulus, to which he is to react by speaking its opposite, this form of reaction is again more complex than the addition process. During the past year the writer accumulated at the McLean laboratory a fairly comprehensive material on this point. The normal time for establishing an association of this grade is about one second. For a group of nine manic-depressive excitements the score of this time is practically normal, averaging 1.2 seconds. For a group of 33 depressions the average is about two seconds, the women showing considerable greater length and irregularity than the men. No other diagnostic group takes as long as this, except a group of psychopathic inferiors, where there is again special length and irregularity among the women, and the average is over two seconds. With this exception, the depressions are longest, and the manic cases shortest. As this function is closely related to intelligence, it is appropriate to say that the intelligence quotients for these groups, by the Stanford scale, are about the same, and at the normal adult average. Thus a definite slowing, enough to dominate the average, has taken place in a number of depressed cases, but it is not peculiar to them, being observed to greater degree under the diagnosis of psychopathic inferiority. The women observed are more affected than the men, in line with the observations of Haggerty and Kempf.

Parallel to these opposites associations, there are series of observations under conditions of free association. The stimulus words used for the opposites are all part of the Kent-Rosanoff series, and

the free associations to these words were taken prior to the opposites experiments. Such words normally have a free association time of about twice their opposites time, in the most precise figure quotable, 1.85 times as long. Despite the name, there is much more chance for interference and blocking under free association conditions than under those of the opposites test. Theoretically, the amount of additional difficulty which the free association conditions introduce, should be a criterion of the degree to which psychogenic interference and blocking is lengthening the times of response. In this function of the experiment there is nothing to distinguish the manic-depressive depressions from certain other psychotic groups. Most of the psychotic groups, including the depressions, average over twice as long for free associations as for the corresponding opposites. That is, the psychotic condition increases the difficulty of the free association set more than it does that of the opposites set, comformably to theory. On the other hand, the diagnoses of general paralysis and psychopathic inferiority show relative increase in difficulty of the opposites associations, understandable in the last instance as the result of intelligence loss evident in the IQ's.

For the manic-depressive excitements the general free association time is practically normal. For the depressions it is about twice the normal, but so it is also for the schizophrenic group. The other groups lie between these extremes. It is to be noted, however, that these measures are based upon median scores. There are many cases where certain associations are accomplished with all the promptness characteristic of the normal individual. The slowing is not a general one, affecting all mental processes of this level. It is one that strikes in sometimes with normal persons, and only more frequently with the present psychotic cases; most frequently with the schizophrenics and the depressions.

One type of experimentation has been brought to bear on the problem, that eliminates the voluntary motor response. This concerns the latent time of organic reactions to stimuli whose content when perceived, should evoke such reactions. The reaction studied was the psychogalvanic reflex. If the registration of the impressions were slower in certain retarded cases, the latent time of the organic response should be correspondingly slowed. No abnormal

slowing of response in clinically retarded or even stuporous conditions was demonstrated under these conditions.

One is impelled toward the conclusion that a formal psychic retardation, or the conception of thinking disorder as such, however convenient as a rough and ready description of behavior, is not an idea that stands up well under objective analysis. It is impossible to cite any measured time function of the thought processes which is of service in the differentiation of the manic-depressive retarded state. A feature which does seem to distinguish it, is the lifting of inhibitions under continued work, but this seems associated with motor activity, being best shown in the tapping test or ergograph, as well as in the simple reaction or addition test. The exercise of motor functions seems the effective factor in releasing the inhibitions, rather than mental work.

To this point, the present remarks have been based on general tendencies observed in various groups of medical diagnosis, the presentation that appeals most directly to the worker having experimental traditions. There may be some gain in speaking of the question as it applies to one or two individual cases in whom the clinical "thinking difficulty" was a prominent symptom. All depressions hardly show this symptom; what is the quantitative, experimental situation, at various levels, in a case that does?

The best example coming to notice since this study was undertaken, is a young woman of about 20, a high school graduate, with a typical retarded depression from which there was recovery in a few weeks. A Stanford intelligence examination, at about the height of the disorder, took about twice as long as usual, and in several instances a test would have been accomplished, but that its time limit passed before a correct response was given. The obstruction to the thought processes was so great that the mental basal year was but seven, though the IQ was up to .70. In a Kent-Rosanoff free association test, no response was produced for one minute in the case of 41 stimulus words out of a hundred. The median time for all responses actually given is over eight seconds instead of the normal two seconds. At the same time, six of the responses made were of normal quickness, and there is continuous gradation up to the longest times, showing that the obstruction is not at all uniform over the thought processes. Opposites tests made at this time were slowed in somewhat the same way, those of

the four stimulus words *sweet, soft, light* and *long* being given relatively quickly, in less than three seconds. Those of six others, *man, black, girl, white, rough* and *beautiful* were not accomplished at all. The median score was 14.2 seconds. Four days later the opposites test was repeated. To the initial stimulus word *man,* she responded *woman* after just less than one minute with the query, "would that be the opposite sex?" Of the remaining 19 associations seven were less than two seconds, and none as long as 10 seconds. Her condition did not admit of an introspective account of her difficulty or its letting up, beyond that she thought she understood the problem better than at the previous trial. The sudden release of inhibitions here shown is easier to understand in functional than in organic terms.

Further evidence to this effect is furnished by the behavior of this case in the simple reaction experiment. Here there was followed a standard procedure, totalling 216 observations. Perfect co-operation was given, and the result is wholly normal quickness and regularity. It was what might be described as an exceptionally "clean" record, even for a normal person. In this quite formal experiment there is no retardation, but it appears up to maximal degrees in association tests, where content is involved.

A more diffuse thinking difficulty appears in another woman of 20, also of high school education. Psychometric examination showed an intelligence quotient of 67, corresponding to an age level of slightly under 11 years, similar to that of the previous case. The reaction times, opposites and free association tests, were each about three times the normal. Ten days later the thinking difficulty had cleared considerably; another opposites test was made in which the time was practically normal. Simple reaction time as measured on this date was longer than normal average, though not necessarily abnormal for her.

While these cases show measurable retardation of mental processes, it is probable that this should not be formulated in terms specific to manic-depressive depression, but rather in terms that are a more general characteristic of mental activity, and may be exaggerated not only in manic-depressive depression, but in other clinical settings like dementia præcox or general paralysis. One is sometimes cautioned against confusing thinking disorder with

memory defect; but it is a question if analogy is not more helpful than distinction.

All knowledge of the thinking of other persons is, for practical purposes, dependent on that person's voluntary acts. An act is regarded as voluntary, when it is preceded by some consciousness thereof. In normal individuals this consciousness is integrated with the consciousness of the main personality. In some pathological states, complicated acts occur without the consciousness of the main personality, and we suppose by analogy, dissociated systems of consciousness to which these acts belong. In a normally integrated personality, voluntary and non-habitual responses do not take place unless and until there is consciousness of them. Few of us could recite the name even of the seventh cranial nerve without thinking of it. "Thinking of it" means the same thing as bringing it into consciousness. Now this process of calling to mind, bringing to consciousness, and making effective for voluntary response, takes time, sometimes little, sometimes much, sometimes infinity, when we say the idea is forgotten. The amount of time it takes is a criterion of where the particular idea at that moment lies with reference to consciousness. Current information, that which is closest to consciousness, is called to mind in a second or less. Other ideas, not so current, take up to five seconds and more. Still others are not recallable at all, that is, they have dropped into the unconscious, whence they may occasionally emerge of themselves, or be recallable by the technique of hypnotism or psychoanalysis. These are fundamental properties of ideas in consciousness, applying equally in normal and psychotic states, and it is not necessary or appropriate to go outside of these to cover all the phenomena of thinking disorder and memory defect. Both of them are essentially a sinking of ideas towards or into the unconscious, so that they are recalled less readily or not at all. Under the name of memory defect, it is generally associated with organic changes, and the ideas are affected according as the organic changes affect the nerve tracts on which they depend for getting into expression. It has been called thinking disorder or thinking difficulty when the same mental process has been associated with a more functional interpretation. It is considered that as organic changes have a selective action on recent memories, so are the effects of thinking disorder often also selective, and they are

selective according to the relation of the ideas to certain topics towards which the individual's condition has particularly sensitized him. Questions by authority in regard to autoerotic habits, would be apt to occasion such thinking disorder in many normal individuals. Beside the suppression of memories already taken place, the immediate affective reaction may obstruct clear thinking on the topic, even for ideas ordinarily accessible to consciousness. The thinking difficulty of the depressions is such a difficulty, in raising ideas to that level of consciousness to which academic psychology applies the term "clearness" or "attention." The intelligent patient also, very properly describes it as a difficulty in concentrating his mind.

Mental symptoms are very largely changes in the facility with which the normal stock of ideas is accessible to consciousness. In general paralysis, arteriosclerosis, senile dementia and Korsakoff, this has been formulated and described as memory defect. Save that recent memories are more affected, this type of disturbances is not especially related to the content of what is forgotten. Moreover, the losses are likely to have greater permanency. In the manic-depressive depressions we are disinclined to think of memory defect because the whole thing is more transitory, and because it is especially characterized by delayed rather than by lost recall. It is, however, the same downward thrust of ideas toward the unconscious, now perhaps more influenced by content than in the organic cases. In the manic state there is the reverse process of an upward thrust of ideas to the level of conscious expression. Psychoanalytic interpretation of these disorders might easily regard the depression as literally the "depression" of untolerated ideation towards the unconscious, carrying the remainder of the patient's activity along with it; the excitement on the other hand, tending towards a similar result by overlaying the complexes with the quasi-trivial ideation of the flight. In schizophrenic conditions there is an upward thrust of certain ideas into consciousness that has been spoken of as "autochthonous" ideation. The ideas are often bizarre, having less superficial association than the manic flight, and are believed by some to owe their appearance to symbolic relation with repressed ideas. There is a corresponding downward thrust of the more normal types of thinking, which is the mental side of the same process of which the apathy is the

behavior aspect. The result of these considerations is to co-ordinate the mental symptoms of diverse clinical pictures under a unitary concept of fluctuations in level of consciousness.

## DISCUSSION.

DR. ABBOT.—I have been interested in this study of thinking disorder because it is one of the more important conditions which we find in all fatigue states and in the manic-depressive depressions. My general impression has always been that in these states there is a diminution of the richness of associations that arise in response to a given stimulus or situation. Given a stimulus, how many ideas arise immediately in response to it? Many experiments deal with the first idea that comes to one's mind, but some persons think in pictures rather than in individual words. What is the size of that picture and what is the variety of its features?

I would be very glad to know if experiments have been devised to test this richness of association, as well as the speed with which individual reactions can be made, come to the surface and be expressed. Emotional states determine quite largely the content of the associations that do arise, and it may be that they serve as blinders, as it were, to narrow and lessen the richness of associations that would ordinarily arise.

DR. WELLS.—I do not recall any experiments on the richness of associations, and it is doubtful if the present technique of experimental psychology would lend itself to satisfactory determinations along that line.

# RATING SCHEME FOR CONDUCT.*

By JAMES S. PLANT, A. M., M. D.,

*Associate in Anatomy, Harvard Medical School; Clinical Assistant and Pathologist, McLean Hospital, Waverley, Mass.*

## Origin of the Problem.

The fundamental problem involved was the bettering of nurses' notes in psychiatric hospitals. In combating the nurses' tendency to draw conclusions rather than state facts I prepared a set of instructions in which, in the various fields of the patient's conduct, certain definite objective facts were stated. This gave her some idea of the character of the material desired. The next step was simple—namely, the arranging of these objective facts in each "category" of conduct in a definite order.

## The Scheme.

This gave rise to a definite scheme of nurses' notes. At the present time the entire field of inquiry is divided into 19 "categories." These are:

*Physical:*

1. Weight.
2. Sleep.
3. Physical exercise.

*Mental:*

4. Attitude towards taking food.
5. Room and attire.
6. Reaction toward the nurses.
7. Care of self ("tidiness").
8. General knowledge as shown in conversation.
9. Emotional reaction.
10. Resourcefulness and ingenuity.

* Read at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31, June 1, 2, 3, 1921.

11. Rapidity of habit formation.
12. Span of attention.
13. Hallucinations.
14. Delusions.
15. Orientation.
16. Insight.
17. Recent memory.
18. Reaction to visitors.
19. Judgment.

It is not claimed that these fields cover the entire conduct of the patient. Obviously the inclusion of a new field must depend upon our ability to sub-divide that field in an orderly fashion, and the exclusion of fields must depend upon the difficulty attending the nurse's fitting of the patients into the various sub-divisions of that field. I undertake a revision every month or two. At present we are having more trouble with "judgment," "habit formation" and "insight" than with any of the other fields. The latter two of these I am convinced can be rearranged satisfactorily—perhaps we must permanently drop the first one.

In each one of the above fields there occur sub-divisions as illustrated below:

ROOM AND ATTIRE.

1. Patient stuporous or uninterested in appearance of room. Absolutely no interest in appearance of person or room.

2. Room and person very untidy. Patient destroys clothes and furniture. May or may not smear person and furniture.

3. Room and person very untidy. Does not destroy clothes and furniture. Smears person or walls or furniture.

4. Room distinctly untidy. Patient does not dress.

5. Patient unwilling to dress—but does not remove clothes if coaxed or forced to put them on.

6. Patient dresses but there are distinct evidences of untidiness in his dress and room.

7. Little evidences of untidiness about the room or clothes. A few buttons unbuttoned, spots on clothes not removed, etc.

8. Room and clothes neat but patient makes no effort to make them attractive.

9. Room and clothes neat. Patient willing to have tasteful decorations, but has none.

10. Active effort to obtain objects to decorate tastefully room and attire. Always "well dressed." Room "attractive."

11. Over-decorates room and self. Foppish. Red Cross buttons all over clothes, or room decorated in outlandish fashion.

ATTENTION.

1. Stuporous.

2. Can't hold attention long enough to do even commonest things such as completely dressing self or eating a meal.

3. Dresses self but can't hold attention long enough to do any particular work.

4. Can do only childish pieces of work. Cannot fit a picture puzzle of more than 15 or 20 pieces.

5. Can do only childish pieces of work if they are new. Will do very long and complicated pieces of work along lines he has been working on—as picture puzzles.

6. Can sew for half an hour or so. With the men—those who can play a game of checkers or billiards but does nothing requiring a longer time. Leaves task half finished—to take up some other task.

7. Remains interested in a piece of work until the end of the day, but next morning has forgotten it or has no interest in it.

8. Will work for a day, or day and a half, on a piece of work, and finish it.

9. Often stops, even for days, in a task requiring a long time but goes back to it over and over again until it is finished.

10. Plans and carries out a piece of work requiring a long period of time, as weaving a rug or making a piece of pottery.

As shown in the above examples the sub-division is attempted upon an orderly and rational basis. The basis is 10, although 11 and 12 occasionally appear within that particular category where an *over-function* of the faculty is involved. On its face we are dealing with a facultative psychology, long since discarded. That is, however, not the case since the terms are social and not psychological.

The orderliness of the sub-divisions depends upon two factors, the first of which is an attempt to give the nurses some rational basis upon which to work in place of a hit or miss group of statements. Secondly, and this seems by far the more important factor, we have attempted to recapitulate ontogeny in the order of the sub-divisions. This is comparatively easy for those categories which may be termed "asocial." By such categories I refer to those in which there is a lack of appreciation of society rather than a definite anti-social conduct. Thus we would call the fields of

hallucinations and delusions "anti-social" categories, whereas those which picture the growth from infancy to adult life are of the "asocial" variety. Merely from another angle, if we are to consider the ego and alter as two distinct opposing factors in conduct, then No. 1 in any category of this system should describe the ego rampant, and as we progress towards 10 there should be a progressive increase in the value of the alter in defining conduct. As we go on to 11, 12, etc., the alter becomes the predominant influence.

### Collection of Material.

On a given day the nurse simply enters 19 numbers for each patient involved. These numbers correspond to the statements in each category which she feels come nearest to fitting the given patient's condition. These charts are filled out at intervals of time differing in accordance with the patient's residence at the hospital. All new patients receive a complete entry every three days, whereas every patient receives an entry at least once every four weeks. The system is of course highly elastic so that for very rapidly changing patients of any term of residence we may make entries as frequently as we desire. As I collect the finished entries it is my custom to challenge certain numbers. This always tends to continue the freshness of interest. By setting aside Tuesdays and Fridays for the collection of all material we consolidate the nurse's work and my own.

### Treatment and Material.

I make three calculations; the average for the three physical categories; the average for the 16 mental categories; and the standard deviation for the 16 mental categories. This is a fairer figure than the mean error because the standard deviation much more emphasizes the wider scatterings. These very wide scatterings I consider of importance. Through the construction of special tables this mathematical work is not arduous or time consuming.

From these figures I construct charts. We must emphasize the value of stating the mental condition of the patient as a zone rather than a line. The width of this zone is determined by adding and subtracting the standard deviation from the average.

## The Nurse.

The nurse is relied upon for all of the material. This is because she, and she alone, knows the 24-hour per day patient. Usually after filling out one complete chart for two or three patients she does very well. I consider this due in a large part to our attempt in the system to use the vocabulary of the nurse. These charts constitute a matter of interest and stimulation to her. She finds them more interesting than "written notes," because they represent her efforts graphically; more satisfactory because they include a great deal of material she otherwise has not time to record; more helpful in that in the low numbers she sees immediately where her efforts must lie; more stimulating because in the progress of her own numbers she sees the patient's progress; easier and quicker. The whole thing translates vague wishes and desires, or vague fears and disappointments into concrete, tangible numbers and this the nurse appreciates. Not that for her it does not have its difficulties. Some patients "don't fit at all"—other patients are "two people."

The charts are the subject of frequent discussion and various interesting points of the system are taken as subjects for lectures given about every three weeks. Just as in any other system I believe that we will maintain a freshness of interest in the nurses as long as we retain *our* freshness of interest. Unfortunately, there is nothing kinetic in any system.

## Statistical Treatment.

We are dealing with a rating system. It has been in operation on 227 patients over a period ranging from two to six months. Revisions to date have been so frequent that exact statistical statements can now not be made. We are in possession of something over 1000 complete entries, which means a total of about 20,000 figures. As far as the average and the standard deviation are concerned the revisions have not been such as to prevent our making a fair comparison throughout the period of six months.

Is the average fair? The psychologist considers it just as unscientific to add "judgment," "taking food" and "emotional reaction" as it is to add cows, houses and apples. On its face this represents an absolutely unscientific procedure. On the other

hand a striking fact presents itself, namely, that if we *do* average these figures and *do* make a chart on the basis of that average we arrive at a beautiful picture of the progress of the case. From an apparently unscientific basis we have arrived at an excellent practical result. This being the case it is for us to develop a theory which is sound. Such I have attempted in the following. This system is a *conduct* system. We are not dealing with psychological factors, but in every case the thing judged is conduct as pertains to these various factors. To go back to our analogy, it is impossible to add apples and pears, but if we call both of these "fruit" we can add them and accurately do so. Various charts accompany the article and they seem to the writer to substantiate the practical value of the average and standard deviation. Whether this theory be correct or not, I don't know, but it seems to me at the present time to be the simplest explanation of the accuracy of our results.

Assuming for the time that we have a rational rating system, and assuming that the average is fair, we must meet the following mathematical requirements—that is, as a purely mathematical scheme there are the following requirements:

1. Mental condition must in each case be expressed in conduct entities. In the complexities of normal life this is perhaps not possible, but in hospital life the variable factors are few since we largely remove the environmental complexities. Wherever the constants are so predominant, the interrelation of the remaining variables becomes simpler. Practically, and I am inclined to think that there is a sound theoretical basis for the statement, the variables *themselves* tend to become simpler also. Whether this is a reflex from the simpler environment or whether it is due to a blunting process which so frequently accompanies mental disorders one cannot definitely state.

2. There must be a high and positive correlation between the groupings in the different categories in recovering cases. I recognize that this involves a departure from the accepted theory of rating systems. The psychologist would say that in such a system there is a redundancy of information. If he finds in a group of tests that there is high correlation between any two or three he throws out all but one of these highly correlated categories. By seeking this high correlation in convalescing cases and by calcu-

lating the standard deviation for *all* cases, I have arrived at a figure in this same standard deviation which we will see later is of the greatest importance. This part of our scheme represents a marked departure and, to my mind, an undoubted improvement upon the fundamental theory of previous rating schemes.

3. The steps in each category should represent an approximate equality of difference. Only experience and revision will consummate this. On the basis of some 16,000 entries I have attempted to adjust the scheme to fit this requirement, but as the data grows there must be further revision.

On the basis of these three mathematical considerations we consider that the average is a figure fairly arrived at and of real value. On the basis of practical considerations, namely, its ability to picture an actual process, we had arrived at the same conclusion.

What does the standard deviation indicate? It is an even more labile figure than is the average. We can only judge its meaning by comparing it with the clinical data that we have on the case at the time. Up to the present time there has been a very high correlation between the presence of a high standard deviation and the amount of internal mental confusion the clinical man judged at the time that the patient had. If as we go on this should continue to be the case we have in this figure an intensely valuable tool. If the average falls through confusion we know clinically that the prognosis is not necessarily bad, and we have found so far that *where the average falls accompanied by a marked increase in the standard deviation,* the case has been one in which we expect an *ultimate recovery*. Especially in the accompanying charts of manic patients one can see that as the average falls the confusion (if our standard deviation does indicate confusion) increases. On the other hand in the accompanying charts of dementia præcox or Schizophrenic patients one can see *a fall in the average accompanied by a marked diminution in the standard deviation.* In a scheme which is highly mathematical we hesitate to validate the standard deviation on theoretical grounds, although I believe that this can be done; rather do we establish its validity on its basis of high correlation with clinically observed phenomena, and I must reiterate that up to the present time the amount of standard deviation has shown an exceedingly high correlation with the amount of internal mental confusion judged to be present at the time. We

have also noticed in several cases that a marked drop or rise in the average has been preceded a week or two by an increase in the standard deviation. The problems involved are in some respects different from those at the basis of other rating schemes employed. Regardless of this we do not hesitate to recommend the careful consideration of this alteration of the fundamental theory of rating systems in general.

## Accuracy of the Scheme.

The accuracy of this system may be tested in three ways.

First test of accuracy. You may ask the nurse to fill out repeated charts on essentially chronic patients. These patients of course change from month to month, but in many the change is very slight so that we may consider the results as pertaining to essentially the same patient. Such a set of results I have studied statistically for 100 cases. We may also ask several nurses to fill out a chart on the same patient for the same day. In testing this latter I used a group of nurses from the Army Training School for Nurses. Nineteen of these nurses with absolutely no previous instruction were asked, each to fill out a chart with no help, on any patient whom they might choose. This was done on the same day that the regular McLean nurses filled out charts for these patients. The average deviations for the two groups follow:

| | McLean nurses, 100 cases. | Army nurses, 19 cases. |
|---|---|---|
| Reaction to visitors | 1.25 | 1.4 |
| Judgment | 1.22 | 2.9 |
| Delusions | 1.01 | 2.3 |
| Insight | .91 | 1.8 |
| Hallucinations | .81 | 1.4 |
| Habit formation | .72 | 1.9 |
| Recent memory | .69 | 1.0 |
| Social reaction | .55 | 2.2 |
| Attention | .52 | .6 |
| Resourcefulness | .50 | 1.7 |
| Room and attire | .48 | 1.2 |
| General knowledge | .42 | .7 |
| Orientation | .27 | .8 |
| Taking food | .21 | .3 |
| Care of self | .17 | .9 |

It will be noted that the deviation for the army nurses is far greater than that for McLean nurses, but the reader must remember that they had had absolutely no instruction or experience with these charts and that they were asked to fill them out before they had had but a few of their psychiatric lectures. Even in consideration of this in five of the categories they averaged a difference of less than one point from returns of McLean nurses. In only three cases did they average a difference of more than two points. As stated earlier in the paper, the McLean nurses have the greatest trouble with the categories of "judgment," "habit formation" and "insight." It seems fair to state that at least 10 of the categories are at present in such a state as to be employed with considerable accuracy to all patients.

The second test of accuracy. We present to the clinical man the finished charts with a request that he name the patients involved. This test can be applied only to new cases since the chronic cases change very little in the period involved. Unfortunately I have not made a scientific application of this test—frequently simply at an opportune moment exhibiting an interesting chart to the clinical man. In about 50 per cent of acute cases he gives the correct name. An even less scientific application of this test is later to give the name and then inquire of the clinical man as to whether he considers the picture a fair one. By this test about 90 per cent of our charts are accurate. It is unfortunate in the test which is so final that its application is necessarily of a somewhat hit or miss character. At the present time the test cannot be applied because after the clinical man has once seen a chart we have the factor of memory entering.

The third test of accuracy. In the laboratory we take the facts of an old system and see whether those facts adduced from a new system fit the known data. If they do we assume the new system to be accurate. The results to be quoted below were arrived at through some mathematical procedures which we carried on without the slightest knowledge of pre-conception even on my own part as to the results to be obtained. I made a sub-division of the 16 mental categories into the following groupings:

| Group 1. | Group 2. |
|---|---|
| Taking food. | Resourcefulness. |
| Room and attire. | Habit formation. |
| Social reaction. | Attention. |
| Conversation. | Orientation. |
| Reaction to visitors. | Insight. |
| | Recent memory. |
| | Judgment. |

| Group 3. | Group 4. |
|---|---|
| Hallucinations. | Emotional reaction. |
| Delusions. | |

Group 5.
Care of self.

If we consider only Groups 1 and 2, it seems quite evident that Group 1 deals with the social reactions of the patient, whereas Group 2 deals with inherent mental qualities present. If we want to consider the whole thing on the basis of conduct, Group 1 represents the patient's conduct or reaction towards society and Group 2 his reaction to his psychosis. These things overlap. Group 2 to a certain extent controls Group 1. More than that, in both groups there is a certain amount of both social and individual factors and yet on the whole we may say that Group 2 represents the patient's mental capacity, whereas Group 1 represents what he does with that capacity. Now if we go through the 220 cases involved, patently they would fall into four clases. One class will show the average of Group 2 *always above* the average of Group 1—no matter how many entries the nurse makes. The second class will show the average of Group 1 *always above* the average of Group 2 no matter how many entries. There will be two other classes in which the averages will oscillate. In one of these latter two classes the average of Group 2 will tend to be above that of Group 1, and in the other the average of Group 1 will tend to be above the average of Group 2.

Now the people in these four classes may be sub-divided on the basis of the diagnoses on which they are carried at the hospital. This allows of the construction of Table 1, in which the figures represent the number of patients of a given diagnosis in each class.

Looking at Table 1 from a purely mathematical point of view, or we may say from the point of view of nurse's conduct charts,

we notice a steady progression as we go from top to bottom, of a movement of the larger numbers from left to right. In other words the table is constructed on the basis of the nurse's conduct scheme in such a way that there is a certain mathematical progression of the predominating numbers from left to right. Does this fit the clinical diagnosis? If one draws a line between diagnosis

TABLE 1.

| | Average of group 2 higher than that of group 1 | | Average of group 1 higher than that of group 2 | |
|---|---|---|---|---|
| | Always Class 1 | As an average Class 2 | As an average Class 3 | Always Class 4 |
| Psychopath | 11 | 2 | .. | 1 |
| Psychosis on strong psychopathic basis | 5 | 6 | .. | 1 |
| Manic depressive depression | 5 | 4 | 1 | 1 |
| Chronic circular manic depressive | 9 | 5 | 1 | 2 |
| Manic depressive excitement | 1 | 2 | 1 | .. |
| Catatonic dementia præcox | .. | 2 | .. | .. |
| Acute infective exhaustive | 1 | 2 | 2 | 1 |
| Paranoia without dementia | 2 | .. | 1 | .. |
| General paresis | 1 | 1 | 3 | 3 |
| Paranoid dementia præcox | 4 | 5 | 9 | 2 |
| Involution melancholia | 7 | 5 | 6 | 16 |
| Dementia præcox | 9 | 9 | 10 | 40 |
| Arterio sclerotic dementia | 1 | 1 | .. | 5 |
| Senile dementia | 1 | .. | .. | 7 |
| Epileptic dementia | .. | .. | 1 | 1 |
| Feeble-minded with episode | .. | .. | 1 | 1 |
| Feeble-minded | .. | .. | .. | 2 |
| Sum of upper half | 34 | 23 | 6 | 6 |
| Sum of lower half | 23 | 21 | 30 | 77 |

"paranoia without dementia" and "general paralysis" he will see that everything above the line is of a diagnosis precluding dementia, whereas below the line we have the dementing and feeble-minded group. There are two exceptions to this. Above the line occurs the catatonic dementia præcox group, whereas below the line occurs that anomalous catch-all, involution melancholia. The latter has been a long sufferer at the hands of a great many queer conditions which have their onset or exacerbation at the involution period. This much may be said of the catatonic dementia præcox group,—both cases involved in Table 1 are very

young, and in both cases the episodes have been of such a character that at one time or another they have been diagnosed as manic depressive episodes. There is little dementia in either of the cases as yet.

It is apparent, if one has followed the mathematical procedures, that the results obtained from an analysis of the nurse's conduct scheme fit with beautiful accuracy the diagnoses made by the hospital staff. In that this analysis involved procedures certainly unguessed by the nurse, Table 1 seems to me to represent a beautiful and very satisfactory proof of the accuracy and value of the scheme involved. There is not an absolute fitting of the numbers with the diagnoses, and I have considered that perhaps this was due to the factor of age. The average age of all persons in Class 1 is 50; Class, 2, 50; Class 3, 49; Class 4, 55. Within each diagnosis there is a marked tendency to progress in age as one progresses from Class 1 to Class 4. This is brought out in Table 2, which is the same as Table 1, except that in parenthesis are given the average ages of the patients involved.

TABLE 2.

| | Average of group 2 higher than that of group 1 | | Average of group 1 higher than that of group 2 | |
|---|---|---|---|---|
| | Always Class 1 | As an average Class 2 | As an average Class 3 | Always Class 4 |
| Psychopath | 11(47) | 2(49) | ..... | 1(41) |
| Psychosis on strong psychopathic basis | 5(44) | 6(48) | ..... | 1(46) |
| Manic depressive depression | 5(47) | 4(51) | 1(69) | 1(55) |
| Chronic circular manic depressive | 9(51) | 5(59) | 1(47) | 2(75) |
| Manic depressive excitement | 1(33) | 2(59) | 1(27) | ..... |
| Catatonic dementia præcox | ..... | 2(30) | ..... | ..... |
| Acute infective exhaustive | 1(42) | 2(36) | 2(18) | 1(40) |
| Paranoia without dementia | 2(68) | ..... | 1(79) | ..... |
| General paresis | 1(38) | 1(40) | 3(53) | 3(55) |
| Paranoid dementia præcox | 4(38) | 5(44) | 9(42) | 2(53) |
| Involution melancholia | 7(56) | 5(63) | 6(60) | 16(65) |
| Dementia præcox | 9(50) | 9(45) | 10(46) | 40(42) |
| Arterio sclerotic dementia | 1(63) | 1(68) | ..... | 5(76) |
| Senile dementia | 1(74) | ..... | ..... | 7(78) |
| Epileptic dementia | ..... | ..... | 1(54) | 1(36) |
| Feeble-minded with episode | ..... | ..... | 1(45) | 1(22) |
| Feeble-minded | ..... | ..... | ..... | 2(47) |
| Average | 57(50) | 44(50) | 36(49) | 83(55) |

If in Table 2 we exclude the dementia præcox groups—and we may fairly do so since the diagnosis demands a comparatively early dementia—we get the following averages for the ages in the different classes:

| | |
|---|---|
| Class 1.....51 years. | Class 3.....54 years. |
| Class 2.....54 years. | Class 4.....67 years. |

So that it seems evident that over and above the factor of diagnosis there enters to a considerable extent the factor of age in which factor probably enters the matter of beginning dementia. Unfortunately I have not as yet had time to change this absolute age of the patient into length of psychosis.

We have considered the accuracy of the scheme on the basis of three possible tests. It is not accurate if we are considering accuracy in the order of chemical or physiological experimentation, but from a clinical point of view and by the order of clinical tests it seems that this system very satisfactorily meets such tests of accuracy as we have applied. Moreover this scheme, since it is a rating scheme, is possible of refinement. In comparison with such other schemes of nurses' notes as I am acquainted with, we are here peculiarly able to make readjustments. This I think is the case beyond question for every category except that of "emotional reaction." I can only say from experience, asking that the reader picture the theory for himself, that the nurse's judgment of the emotional reaction of the patient in reality—mayhap very unconsciously to the nurse—constitutes the nurse's diagnosis of the patient's condition. That is, if an apparent depression enters the house I find the nurse filling in, in *B* (depression with retardation). As the patient shows up more præcox symptoms sooner or later I find the nurse changing her entry to *D* (changing emotional reaction, irritability, unreasonableness). If it be true that medical men differ in their diagnoses, so much the harder is it for the nurse to arrive at some definite conclusion as to the patient's underlying condition. Thus it is that as long as the chart is left absolutely in the nurse's hands, and this I consider essential, it is quite impossible to expect a completely satisfactory handling of the category of emotional reaction. It is possible of course to indicate in

advance under which division the entry should be made, but if this is done any increase in accuracy that we obtain is more than offset by our interference with the nurse's judgment. These charts are nurses' charts. They represent *her contribution* to our research work. To the extent that you give the nurse full rein do you get her best co-operation and after all her best observations, and we should accept a known inaccuracy rather than to in any way impair what I consider to be one of the most fundamental points of value in the scheme.

## The Practical Value of the Scheme.

As to the value of the scheme we may say that:

1. In so far as it represents a distinct and valuable line of study, the nurses can feel, and rightly so, that they have a definite part in the research work being carried on at the hospital. The nurse sees in this present system a contribution from her point of view, and I always emphasize, and I do so with justice, that this is a contribution of a very special sort and one which no other than the nurse can possibly make. She knows a patient whom the doctor can never know.

2. The nurses are interested in the progress of their cases and they tend to note little things. We arouse the nurse's interest in taking up the little things that the patient says, in watching little acts for their indications, and to the exent that the nurse does this she becomes more and more a valuable asset to the hospital.

3. The results allow of their employment by the staff, of nurses' data, hitherto not permissible in the written notes. The notes in this scheme give easily referable data. Admittedly any given patient does not fit exactly all of the statements involved in the scheme, but how much more graphic is it to see an entry of "2" jump to an entry of "8" in the category of "taking food," for example, than it is to attempt to read two or three sentences of a note written in long hand. Given this data we may make our inquiries as to the why's and wherefore's of the change. This system makes us ask questions.

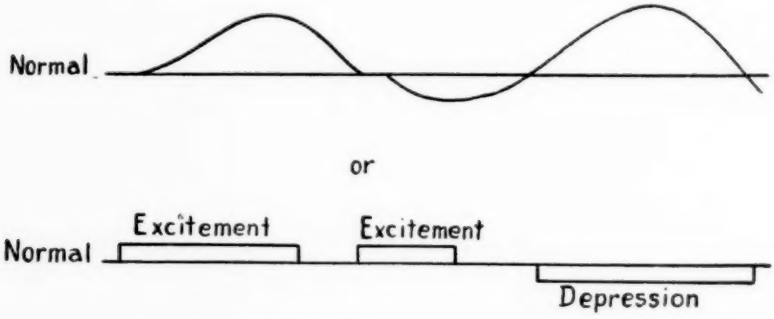
4. The results give a graphic picture of the "progress of the case," indicating, in the combat field, critical points.

## The Philosophical Concepts Involved.

From almost the earliest philosophical thought comes the cry, "everything flows," nor have philosophical systems, with few exceptions, ever ultimately escaped this dictum. If everything flows, personality must flow. One searches psychiatric literature in vain for any other concept than that dementia præcox patients always remain the same and that manic patients during their excitements remain essentially the same. The blood sugar taken from 50 manic patients is compared with blood sugar taken from 50 dementia præcox patients. It is true that a patient who is dementia præcox holds that diagnosis a year from now just as truly as to-day, but I hold it is fundamental that that patient is a different personality to-day than she will be one week from now. To make a blood examination once, or—as some very daring experimenters have done—even three or four times, to make a mental examination once, or make a neurological examination once, and to consider that these results picture the patients seems to me to be fundamentally fallacious. If it be true that "everything flows" by that much is it true that the patient's condition to-day is of no interest nor is his condition one month from now of any interest—the only matter of interest being the *relation* of the condition to-day to that of one month from now. This seems a simple philosophical concept and yet the literature is full of "blood pressure of 100 manics as compared with 100 dementia præcox"—"blood sugar in manics as compared with dementia præcox," etc. In these studies the determination is made once or perhaps even twice on each patient. They are "cross-section" studies, whereas I am making an appeal for "long section" studies on psychiatric patients. If we are to know the patient, or indeed any person—because this problem is really the problem of the character of life—we must compare the patient with himself and not with any other patient. Where laboratory men have carried on recurrent procedures they have ascribed the variations to error. To a certain extent this may be true, but I doubt if it is half as true as the ascribing of these differences to these changes in personality. If personality changes, if the blood changes, the cells and the thoughts go through cycles as we all live, the study of these changes must be more fruitful in the field of psychiatry than in any other field because with apparent physical

preservation there occur marked swings in personality, so that if there be "curves of life" in all of us, so much more so must they occur in psychotic patients.

It is perfectly true that psychiatrists study the progress of their cases. They know the ultimate outcome of certain syndromes. Why, then, in their careful laboratory work do they compare one point in their progress with one point in the progress of another psychosis? Is there not an absolutely unique field for the laboratory comparison of the daily changes in any one patient? We make this appeal that we may escape from such figures as follow.




Now if it be true that an accurate plotting of the progress of the case represents a significant mode of studying psychiatric cases, it is evident that this rating scheme for conduct over and above its value in the practical realm attains the level of a valuable philosophical notion.

Providing that in conjunction with these curves which we plot for nurses' notes we also plot curves in the field of blood and urine chemistry, and in the field of psychology, it is evident that the possibility exists of plotting a complete organism or a complete personality. It is just as evident that with this the goal we have very much in the way of refinement to carry out in this present nurses' conduct system and we must of necessity add to our psychological and chemical fields of study at least that of a physiologist. However, these practical considerations do not invalidate the theory involved. namely, that it is an *ultimately possible* thing *to plot*, on given ordinates and abscissæ, *personality*.

Turning entirely to the realm of mathematics we know that any given curve if plotted on an ordinate and abscissa is:

1. Capable of expression by mathematical formulation.

2. Capable of sub-division in the simpler curves.

Fourrier in 1816 made the pronouncement that any curve is completely analyzable into a group of sine curves. The simplest expression of this is of course the analyzing of a sound into simple tones each of which is expressible by a recurring curve of constant ampliture and period. On the basis purely of mathematics we must be able to analyze our curve of personality into a group of sine curves. Whether these sine curves represent mere mathematical tools, or whether they are true expressions of unanalyzable phenomena remains to be seen only through experience. It is my belief that unanalyzable phenomena are expressible by sine curves. We know that in the realm of physics and chemistry this is true, nor should it be any the less true merely because the science of personality is more complicated. All of which things are mentioned because the minute that one assumes such a philosophy the implication of this nurse's rating scheme becomes of tremendous importance. It is our notion that the careful plotting, in the fields of conduct, in the fields of blood and urine chemistry, in the field of psychology, in the field of physiology, of various phenomena will give us curves which are amenable to the following considerations:

1. With weighting they may be added or superimposed to approximate personality.

2. They may be compared—with the notion that those which show a high coefficient of correlation represent phenomena closely linked.

3. Those, and we don't expect to find any of these right away, which are a form of simple sine curves may be considered to represent simple unanalyzable phenomena.

4. More complex curves may be considered to represent phenomena of a more complex sort, and to the extent that this complexity is simple these curves, and correspondingly these phenomena, may be considered as the most productive points of attack in the future.

I am attempting to indicate that this nurse's rating scheme is but the first expression of an attempt to introduce a new philosophy and a new method into the study of psychiatry. The epoch-making work of Fourrier, which has been followed later by Galton, Pearson and Urban represents a philosophical notion to which the students of sociology, psychology and medicine have turned a deaf ear. If the doctrine of unanalyzable sine curves be sound, and if, as has been the case, it is applicable to the fields of physics and chemistry, and if mental phenomena represents no more than physico-chemical reactions, then the sooner that we accept Fourrier's work and attempt to apply it the better off we are. One may say that the goal is impossible of achievement and admittedly it demands a tremendous amount of labor, but it does not seem that this invalidates the theory, nor should it deter us for what, as I see it, represents the only rational way of solving the fundamental questions involved.

As a practical matter we have our nurse's rating scheme and in conjunction with this in a selected group of cases we are carrying out chemical and psychological curves that represent the merest particle of the beginning, and it is mentioned here only as an indication that the scheme under discussion has as its basis an important philosophical doctrine.

If our mathematical notions are at all correct, it is not necessary to attain that final accurate plotting of personality involved in the previous paragraphs in order to arrive at a very practical result. For if we can with *any* degree of accuracy plot our personality over a period of time it then follows that merely as a mathematical procedure any sector of the curve preceding the time of study can be reconstructed as can any sector which is to follow. In other words, theoretically it should be possible for us on the basis of these and other mathematical studies to reconstruct the patient's past and in turn to prophesy as to the future. On its face the thing cannot be done. We do not hesitate to affirm that if it cannot be done, after thorough effort, we have a proof—and the only satisfactory one possible—of Helmholtz's assertion that the law of conservation of energy does not apply to mental phenomena. If after our curves are made—nor would I minimize that difficulty—

we cannot reconstruct a past psychotic life which fits the history of the patient, we know that we are wrong. Thus the checks upon such a system are applied with ease and accuracy since we know that, if a reconstructed curve based on six months' experience with the patient does approximately represent what the history shows the patient to have been, our system is working. It seems at present that a definite success or definite failure (and our checks are easily made) will give us important conclusions.

There is another, to me important, concept involved in this nurse's rating scheme. I have emphasized earlier that it is a partition, not an analysis of conduct. In so far as this is a *conduct* scheme in every particular it implies personality, thus representing a type of analysis which at no time destroys personality as a whole. As such a type of laboratory analysis over and above its other philosophical considerations, the theory of the scheme is of value.

## Summary.

We have in this rating scheme:

1. A graphic representation of the progress of the case.

2. A graphic representation of those fields of conduct which fall far below or rise above the general condition of the patient.

3. A system which increases the nurse's interest in her work and her sense of value to the hospital. These are times when every mental hospital is meeting face to face a serious problem as regards nursing. It is high time that we ceased blaming this situation upon economic conditions and on the " newer type of women " and that we accept the fault where it lies, namely, that too much have we considered the nurse as the caretaker, and have felt that our scientific research work might perhaps be more easily carried on without interference from " such a class of people." If this work can mean nothing more, I will be satisfied if it could go as an appeal for more co-operation between the medical man and the nurse in the mental hospital.

4. A fixing or crystallizing of the ever flowing personality so that now we have some replacement of the vague terms that we so frequently have to employ.

5. A chart of clinical progress for a comparison with recurrent laboratory procedures on a few cases. We are starting at McLean

a number of recurrent laboratory procedures and I have looked in vain for any other satisfactory clinical correlation. For instance, as we are studying attentional disturbances three times a week over a period of six months on certain patients and doing the same on quite a number of the factors of blood chemistry, we have in these charts a mathematical statement, however inaccurate it may be to-day, of the clinical progress of the case. We have applied certain tests of accuracy to this nurse's rating scheme and to some extent I have been satisfied with their outcome, yet it is full of mistakes, but if our theory is correct the system is such that it is amenable to correction and to the extent that the theory is correct, these corrections may be final.

6. Such an application of laboratory analysis to the clinical field as is acceptable to the clinician. So long as the consideration in such a system is one of the usual *conduct,* no matter how far you subdivide, it is of necessity also an expression of personality.

7. Such a use of highly correlated data together with the employment of the standard deviation as to yield important information. This may be offered, on a purely mathematical basis, as a distinct contribution to the recognized theory of rating schemes.

8. An application in the field of psychiatry of those philosophical notions which have in the last decade been upheld by Pearson and Urban and which go back to the work of Fourrier. If physics and chemistry and biology can accept and employ the doctrine of ultimate analysis on the basis of sine curves, why cannot we do the same? The search for the unanalyzable curves of psychiatry represent the rainbow's end—the pot of gold—but it is worth the trip and this nurse's rating scheme is serving as the first rough map at McLean Hospital for such a journey.

In the American Journal of Insanity, Vol. 71, page 761, appears a description of "The Behavior Chart in Mental Diseases" by Dr. Edward J. Kempf. This article describes a form of nurse's notes still employed at the Henry Phipps Psychiatric Clinic. There are certain valuable pictorial factors in this form of a chart, which, however, seem to the writer not to involve the same fundamental principles as appear in the chart described in this paper.

## Conclusions.

This rating scheme for conduct:

1. Interests the nurse in research work that is going on.

2. Makes the nurse and her data an integral part of this work.

3. Gives our psychologist, chemist and pathologist such a frame work and correlation for recurrent procedures as I believe he has had in no other hospital.

4. Approximately indicates critical points in psychoses.

5. Introduces into the field of psychiatric research new philosophical notions and a new mode of attack.

6. Introduces a type of laboratory analysis which does not destroy the wholeness, the unity, of the personality.

It is usual in conclusion to extend thanks to those who have been of assistance. I must do more than that. The nurses at McLean Hospital have more than helped me with this scheme. Without them it would have been absolutely impossible of accomplishment. Theirs has been the labor, nor could I begin to express my appreciation of the fine, loyal attitude they have assumed at a time when the nurses in all psychiatric hospitals are being over-burdened with work. In the way of innumerable valuable suggestions and of laboriously plotting many curves, my wife has been indispensable in carrying on this work. Nor could I let this opportunity pass to express my gratitude to my former teacher, Frederick M. Urban. Those philosophical notions which during his stay in this country he attempted to foster may fall by the wayside, but that will be no fault of his inspiring teaching. For what of value there may be in my philosophical notions I have only him to thank and for what there is of bizarre workmanship and myopic vision in this paper I can only accuse my faulty interpretation of his clear-cut notions on the mechanism of personality.

## EXPLANATION OF CHARTS.

The charts are to a large extent self-explanatory:

The solid black line shows the mental average.

The dot and dash line shows the physical average.

The short dash line shows the limits of the standard deviation for the mental categories. That is, the solid black line is always half way between the two short dash lines. The short dash lines are determined by adding to and subtracting from the mental average the standard deviation.

CHART I.—J. E. C. Female. Age 42. Acute confusional depression. Note:— (1) Early wide standard deviation. (2) Retention of some confusion (as shown by standard deviation) during February. (3) Failure to reach "10" even on discharge being a picture of patient's normal level (never has been above 8 or 9 in "room and attire"). Apparently a beautiful picture of the retention of vague fear and apprehension for some period after the major elements of confusion have disappeared.

CHART II.—E. M. D. Female. Age 59. Chronic circular. Marked manic attacks preceded by a month or so of mild depression. Manic attacks not so marked as formerly but now more frequent. Interval of "normalcy" about 4 or 5 months. Note: (1) During March some lowering of average picturing the mild depression. (1) Few days of normal level early in April. (3) Marked confusion during manic attack from which she is now recovering. If we had similar charts for her earlier attacks there would be many points of interesting and valuable comparison.

CHART III.—B. B. Female. Age 30. Catatonic dementia præcox. Note: (1) Late in January sudden appearance of catatonic stupor on top of what had simulated a manic depressive depression. (2) Marked reduction in standard deviation with the fall in the average. (3) Increase in standard deviation as the average rises again. Compare the reaction of the standard deviation in this type of case with that of the manic depressive or confused group. Notice the very high standard deviation and the wavering of the mental average that precedes the sudden fall.

CHART IV.—M. S. M. Female. Age 29. Dementia præcox who has lived outside for some 8 years despite irritability, unreasonableness, mild ideas of reference, etc. Note: (1) Period of improvement following admission. (2) Retention of fairly high standard deviation even at best period. (3) Steady fall during last three months of average accompanied by tendency for the standard deviation to decrease.

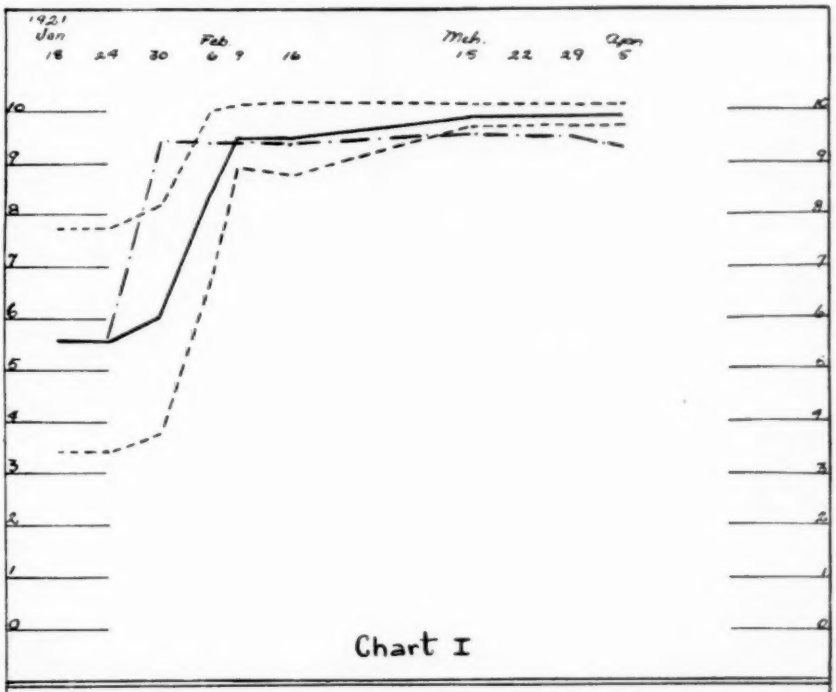



Chart I

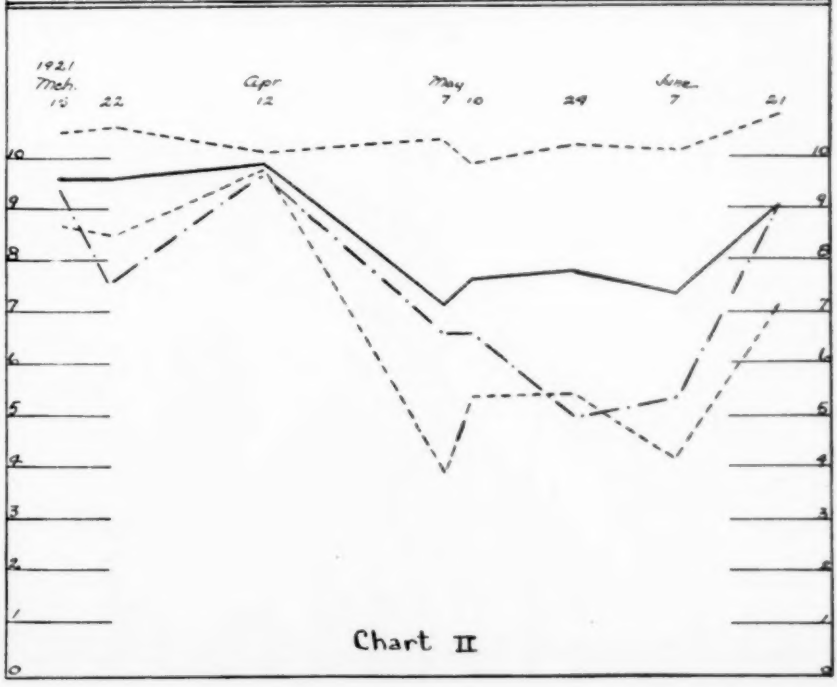



Chart II

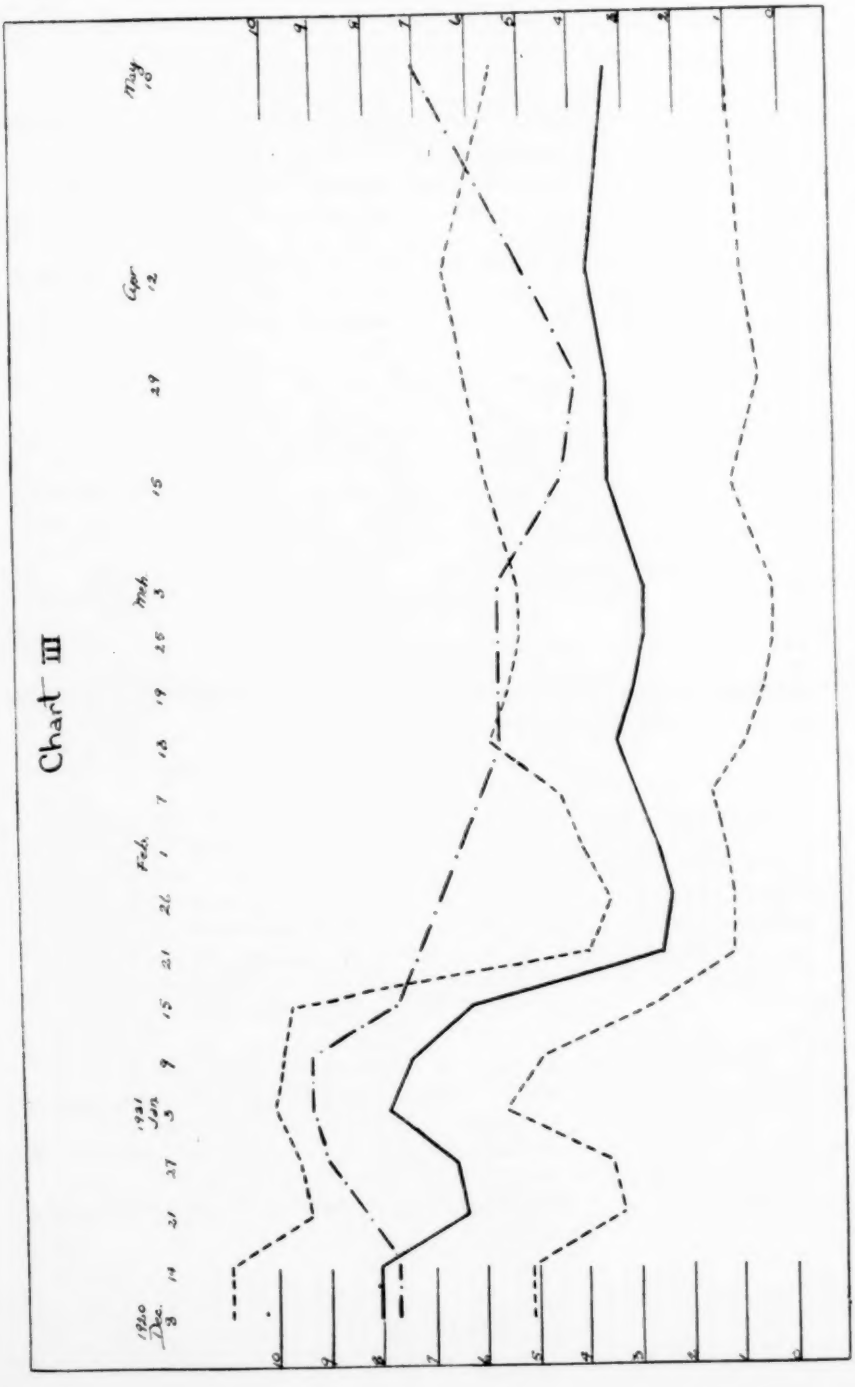


Chart III
1930 Dec. 3 14 21 27
1931 Jan. 3 9 15 21 26
Feb. 1 7 13 19 25
Mch. 3 15 29
Apr. 12
May 10

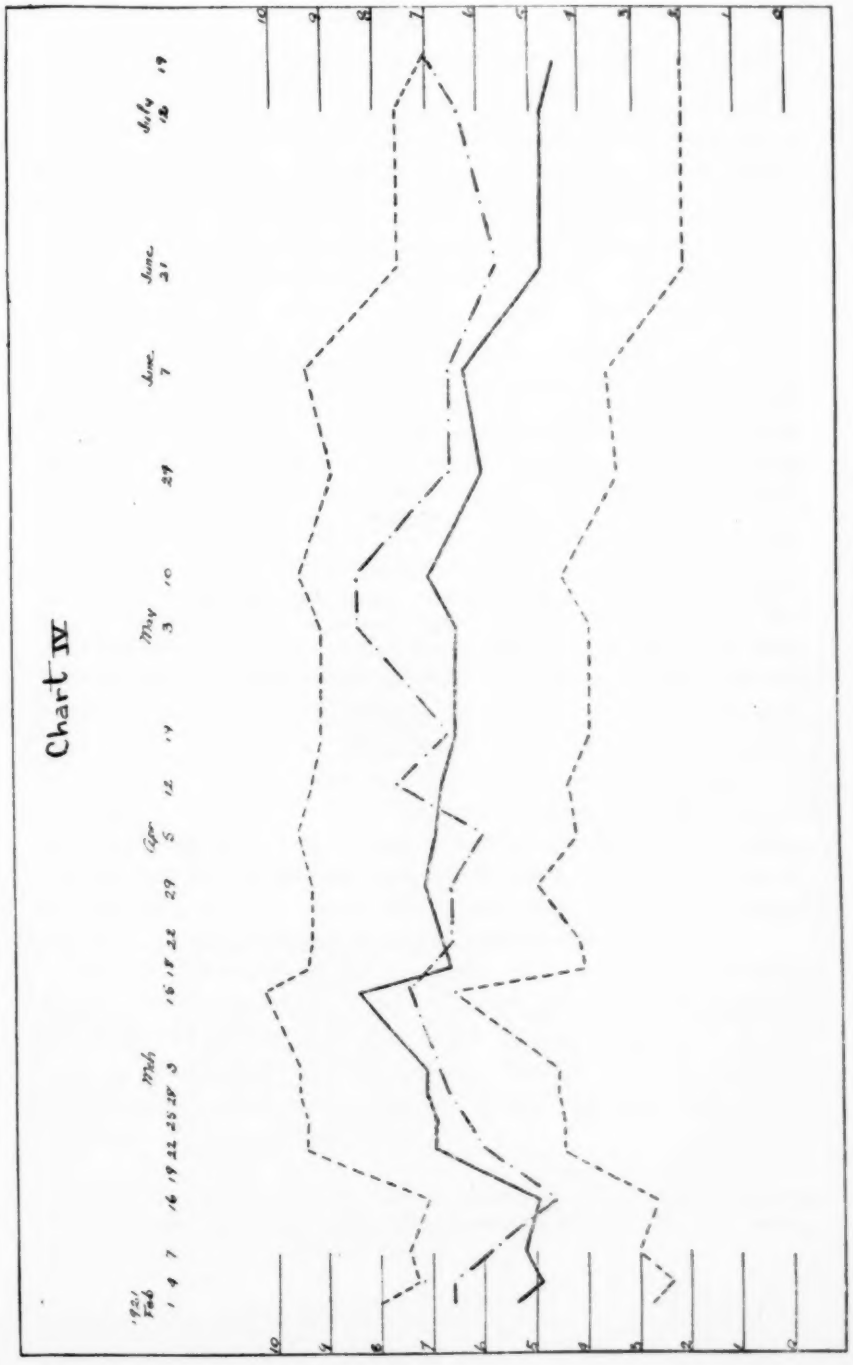


Chart IV
1921
Feb
Mch
Apr
May
June
July

## DISCUSSION.

DR. ABBOT.—This is a very important contribution in this respect: Very many laboratory investigations are made and reported, but often there is absolutely no reference, or very little reference, to the clinical picture with which the laboratory findings are correlated. It has always been very difficult to get a picture, which one can visualize as one can here, of the actual status of the patient in such a way that other laboratory investigations can be correlated with a particular condition, which can be charted. I think it is a very valuable contribution—well worth being carried out and developed further. I want to congratulate Dr. Plant on starting something that is very good.

DR. ADOLF MEYER.—I would like to emphasize with Dr. Abbot the importance of graphic presentations. Most of us have not time to read, always, complete records of cases. If we can express in a graphic form things that happened to the patient, it is one of the best ways of keeping track of the facts and of bringing the physicians and nurses together. Some charts of activities have been kept since the Kankakee days of 1895, but this strikes me as being less static than the activity chart which is now used at the Phipps Clinic.

DR. PLANT.—I have nothing to add, except that I do feel as Dr. Meyer said. This is a much more "flowing" scheme than the others and to that extent it is valuable. The thing that I want to emphasize is that you must get away from the idea of the crystallizing "cross sections" of the patients.

# REVERSIBLE SCHIZOPHRENIA.*

## A Study of the Implications of Delirium Schizophrenoides and Other Post-Influenzal Syndromes.

By KARL A. MENNINGER, M. S., M. D.,
Topeka, Kansas.

ABSTRACT.

*Data.*—Type cases of post-influenzal schizophrenia arranged in ascending order of severity from delirium to dementia præcox. Pertinent literature.

*Deductions.*—Dementia præcox is apparently sometimes *a chronic delirium* (schizophrenia deliriosa). Delirium is apparently sometimes *an acute dementia præcox* (delirium schizophrenoides). Both forms are (sometimes) reversible.

*Inductions.*—These two forms may represent an identical process manifested by varying degrees of reversibility of the schizophrenia. The concept "Reversible Schizophrenia" (*cf.* the term "delirium schizophrenoides") is not a mere nosological quibble, since it may affect our conception of the nature of dementia præcox. It implies *conditions* of reversibility which we may discover to be under our control!

Delirium and dementia præcox have many points of contrast. Delirium is certainly the oldest psychiatric entity; dementia præcox the newest. Delirium is short, schizophrenia is long. Of dementia præcox books are filled with minute descriptions; of delirium there is scarcely a single satisfactory description extant. Of delirium we possess not even an adequate definition, yet agree unanimously upon its autonomy; of dementia præcox we possess precise definition, and still doubt its existence as an entity.

For all this contrast, we recognize their essential similarity. Thus ever the paradox. They are alike, as I shall endeavor to emphasize, in incidence, in appearance, in nature; and as I do not need to demonstrate, they are alike in that of these two the psychiatric world possesses less real knowledge than any other of the 12 great orders of mental disease.

* Read at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31, June 1, 2, 3, 1921.

## History of Delirium.

Our ignorance of the real nature of delirium is the more strange because of the hoariness of the conception. Perhaps because in its classical form it is of all mental disease pictures the most evanescent, the shortest lived, there is, as I have said, now no adequate definition or description of it. "What is delirium?" asks Hoch, and he remains unanswered.[1]

From the time *de* and *lira* were combined to mean literally "wandering from the furrow," this generic meaning has clung to the word. Through various stages it has passed, such as that now represented by the French word "delire," meaning delusional state, and many other prostituted uses, to this present moment of ambiguity and uncertainty.

It appears that to-day everyone takes it for granted that everyone else knows precisely what delirium is, or at least what he means by "delirium"—so no one defines it, and it remains vague in meaning and indefinite in conception. One recalls the day of Esquirol, Martini, Georget, and Burrows, who as Bonhoeffer points out, were unwilling to regard delirium as within the range of psychiatry!

Let us set down here that we will for the present regard "delirium" as a certain mental disease picture concomitant with and directly dependent upon a more general somatic disease, the psychological features being an irregular dissociated disturbance in all mental spheres—perceptual, ideational, emotional, volitional. The pathologists may insist that an encephalitis is inferred.

## Dementia Præcox as a Delirium.

Now of course it is not a new thought that dementia præcox may be a chronic delirium—the psychic manifestations of an encephalitis. Southard, Alzheimer and all the organicists in the dementia præcox controversy have held that general view unframed perhaps and not always so expressed. But here we are considering clinical aspects, and there have been clinicians of ability who insisted upon the relationship.

[1] The statistical manual prepared by the committee of this Association defines many syndromes, many pictures, many terms, but nowhere does it define or delimit "delirium," although the word is used on almost every page.

It was none other than the great French psychiatrist Regis, to whom I think it is not inappropriate to here render particular homage, who developed the conception of dementia præcox as toxic or infectious in origin, from a study of its clinical features. He said, they were essentially similar processes—" with the same fundamental symptoms of obtusion, torpor, psychic inhibition, confused and senseless delusions, alternating agitation and stupor. . . . ." In his second edition he defines dementia præcox categorically as " the phase of chronicity of all mental confusion not recovering, particularly of those arising in puberty." In his edition of 1909 he flat-footedly asserts that " dementia præcox is essentially a toxic psychosis " and classifies it as a species of " mental confusion," a descriptive denominator of the aberrant mental states accompanying or following acute somatic disease. In this edition he confesses the essential inseparability of dementia præcox and " chronic " (*i. e.*, prolonged) mental confusion. He circumvents the difficulty of pronounced predisposition in dementia præcox by allowing two forms, the " constitutionnelle " and the " accidentelle."

Following essentially the ideas of Regis were Dupre, Deny, and others of the French school, but the idea was perhaps most ardently advanced by Dide, who proposed " *to give to the different states (of dementia præcox) the name toxic-infectious psychoses,* subacute and chronic, primary (hebephreno-catatonic) and secondary (paranoid)." Deny was more conservative but freely conceded that " it is certain there exist very great analogies between the clinical picture of dementia præcox and the states of confusion, of torpor and dream-states which characterize the toxic infectious psychoses, and the autotoxic origin of that affection is rendered very possible by this fact."

It is possible that had Regis adopted Dide's excellent suggestions instead of cumbering his ideas with unwieldy names of cumulative adjectives, the idea would have been projected farther and its impression made more lasting. For the fact remains that for all its apparent plausibility the theory of Regis was left decidedly in the background. True, no less a man than Bonhoeffer (in Aschaffenburg's Handbuch, Leipzig and Vienna, 1912) concedes that " severe cases of catatonia not infrequently begin with the alterations wrought by a fever," and points out that many symp-

toms are held in common by dementia præcox and acute toxic psychoses.[2] But he does not admit of this etiology for catatonia, for dementia præcox, and he is in this negation distinctly in the majority.

In fact, little has been written in support of this work except by the French. Kraepelinian domination more or less eclipsed the French psychiatric products, with the result that an infection toxemia etiology of schizophrenia has been little considered. In more recent times we have been too much concerned with mental catharsis and salvarsan to give the cause of schizophrenia its due in consideration or research.[3] Occasionally an isolated contribution on the matter has appeared, *e. g.*, Cotton, Gosline, Knapp, Hoch. The only progressive work has been done in the field of neuropathology.

Thus dementia præcox in the rôle of a delirium has long been familiar to psychiatrists. Except by the French, however, there has been a tendency to dodge the issue of the phenomenon, by giving the syndrome a name neither delirium nor dementia præcox, to wit: Amentia, confusional insanity, puerperal psychosis, acute confusion, acute hallucinatory confusion, acute dementia, etc. Of a sudden, we in America seemed to recognize these syndromes as schizophrenic, whether associated with hyperthyroidism, which I have recently seen illustrated very beautifully, the puerperium, in the too familiar forms with syphilis, with typhoid, alcoholism, trauma, epilepsy and psychic trauma. I say we have all of a sudden jumped to the admission that these syndromes are *schizophrenic*, and of very late we have many of us made bold to declare them identical with what we call dementia præcox. It is a salutary sign

[2] "Of the infection psychoses and catatonia, it may be said that any and all symptoms of the one may occur in the other."

[3] Thus it was, at least, until the very present. But note the sudden change in conception implied by the program of this very meeting. Of nine speakers scheduled for this date, dealing with the nature of dementia præcox, six are frankly taking the position that we speak only of a syndrome, and that this syndrome may be the manifestation of numerous somatic ills and exogenous toxins, as well as of an idiopathic endogenous psychosis of the familiar stamp. It is as if we had all been simultaneously converted from the conventional Germanic to the previously ignored French conception. Most striking is the fact that it would seem as if we were of a sudden all agreed in our revolt.

when we lay aside an assumed technique of discrimination and flatly declare that whether or not this or that picture *ends up* as our classical (Kraepelinian) dementia præcox is supposed to end up, it is nevertheless indistinguishable in cross-section from the picture which is schizophrenia.

### A Proposed Classification by Prognosis.

A very practical standpoint is, I suppose, concerned more with prognosis than with diagnosis. Even those who are not disposed to favor my conception of a reversible dementia præcox will not gainsay the fact that influenza, the war, and an increase in the analytical approach to psychiatry had made the old conception of eventual dementia for all cases of schizophrenia no longer tenable. We must grant in view of such studies as those of McPherson and Hohman ("The Diagnosis of 'War Psychoses,'" *Archives of Neurology and Psychiatry*, August, 1919, Vol. II, pp. 207-224), Austregesilo and many others that many of the cases we have called dementia præcox have not deteriorated and will not dement. I propose to these pragmatic persons for whom facts are of more interest than theories that we are at the present time wholly justified in recognizing for dementia præcox three prognoses, or if you will, three types of dementia præcox based on the prognosis, viz.:

1. The type illustrating Kraepelin's original premise of ultimate irrevocable total dementia.

2. A group on which the acute manifestations of dementia præcox occur in waves or attacks clearing up in large part so that the patients are often discharged recovered, but return sooner or later in one or many subsequent episodes much after the classical fashion of manic-depressive psychosis.

3. A group of cases presenting the syndrome of schizophrenia, but arising upon variously constructed soils and precipitated by a variety of incidents; clinically called dementia præcox, but which, after a relatively short time, make what is apparently a complete and permanent recovery.

Obvious as this prognostic partition is, the fact remains that we persist in a grim determination to crowd our individual cases into a nosology of hebephrenic, catatonic, paranoid, and simplex pigeon holes regardless of the uselessness (to say nothing of the doubtful-

ness) of such classification. The pragmatic point to grasp is the existence of a phenomenon which I propose to ally to the chemical process known as *reversibility*. I contrast this chemical metaphor with the time-worn physical conception of organic and functional, the strictly clinical attitude of benign and malignant trend, and the futile fallaciousness of alleged cause and effect. It seems to me a grave question as to whether any of these have ever helped us very much. Abstractly chemistry, in so far as it can be considered apart from physics, is the realm in which brain processes carry on and there is at least some logic in looking to it rather than to physics for an explanation of fundamental phenomena. From the philosophic standpoint there is the pragmatic justification that a recognition of the reversibility of the schizophrenic process may stimulate us to a further study of the conditions favoring this reversibility.

## Deductions from Influenza Data.

It remains now to report the data from which these conclusions were drawn. The series of cases of psychoses associated with influenza [4] upon which previous studies [5] have been published afford a splendid advantage in the study of schizophrenia with particular regard to its reversibility and its relation to delirium. Hence I turn with advantage to this material, presenting first a summary of our deductions and then a series of cases.

Influenza, like the other somatic ills discussed on this program, can apparently in some mysterious way so affect the brain, normal and predisposed, that the syndrome of dementia præcox unmistakably appears. That this psychosis is sometimes transient, sometimes permanent, will appear from further discussion. I submit that it appears in two (or more) guises, with a distinction but perhaps no difference. Sometimes we are faced by what seems to be a simple delirium, coming on with the somatic illness or directly after it, in the familiar, classical way. Delirious features, *e. g.*, perceptual obnubilation and active visual hallucinosis, are con-

[4] These cases are taken from our series of post-influenzal psychoses, studied at the Boston Psychopathic Hospital, 1918-1919, in association with E. E. Southard and Lawson G. Lowrey.

[5] *Vide*, Arch. N. & P., September, 1919, and January, 1920; J. A. M. A., January 25, 1919, and October 16, 1920.

spicuous. But these symptoms persist, and there develop more and more the stagmata of dementia præcox, and of chronicity. Our usually too favorable prognosis is belied by this outcome. I have termed this form " schizophrenia deliriosa."

The foil thereto is the " delirium schizophrenoides " which others confirm having seen frequently in the recent epidemics. It is a psychosis arising in close association with the somatic illness, but so colored with the hues and tints of schizophrenia that one feels obliged to give a pessimistic prognosis which is usually belied by the further course of the disease, namely, its eventual disappearance.

I maintain that these two forms are not essentially different. It was our clinical experience that many of the acute post-influenzal psychoses were seriously difficult problems in differential diagnosis, and still more difficult problems in point of prognosis, and that our mistakes seemed to be largely mistakes along the lines indicated by the above two groups. We shortly profited by this, however, but found ourselves in the dilemma of being unable to decide at all as to whether specific cases were delirious or schizophrenic (*i. e.*, waiving the possibility of their being both, which of course was my ultimate conclusion).

Concisely, I may state my conclusion that between the mildest attack of simple delirium and the most profound dementia of late schizophrenia, there is a progressive gradation, not in the intensity of schizophrenic symptoms present (since these are variable products of little prognostic significance), but *in the degree of reversibility*. By the degree of reversibility I mean the potentiality for recovery. I am persuaded that dementia præcox (schizophrenia) is at least in most instances a somato-psychosis; *the psychic manifestations of an encephalitis.*[6] The acuteness or

[6] This conception is receiving unexpected support from the epidemic of encephalitis. There has been in the literature repeated mention of the cases of encephalitis closely resembling in symptomatology acute schizophrenia. There have been several articles specifically discussing this point, for example:

Bond, E. D.: Epidemic Encephalitis and Catatonic Symptoms. AMERICAN JOURNAL OF INSANITY, Vol. 76: 261, Jan., 1920.

Bourges, H. B., and Marcandier, A.: Catatonic Delirium in Epidemic Encephalitis. Bull. et mem. Soc. Med. d. Hop. de Paris, 44: 685, May 14, 1920.

chronicity, the benign or malignant nature of this encephalitis perhaps determines the degree of reversibility of the schizophrenia. In this it is allied to the clinical features of many other organic brain diseases, *e. g.*, cerebral hemorrhage. Even these, indeed, might be conceived as having degrees of reversibility.

It is on this basis that the pragmatic classification of dementia præcox by prognosis as proposed above is theoretically supported. Diagnosis is chiefly useful for prognosis. Prognosis depends on reversibility. It remains then to determine the conditions of reversibility. They are the touchstones of treatment!

## Cases.

To concretely illustrate my point, I shall present a few representative cases of post-influenzal psychoses, schizophrenic in type, and varying in degree of reversibility from 100 per cent to 0.

Case 1.—Illustrating the extreme form of "delirium schizophrenoides," a schizophrenia the reversibility of which was in this case canceled by death, but which is clinically so typical as to be a good illustration.

---

Sicard and Bollack: Catatonic in Encephalitis. Bull. et mem. Soc. Med. d. Hop. de Paris, 44: 262, Feb. 20, 1920.

Wilson, S. A. K.: Epidemic Encephalitis. Lancet, 2: 7, July 6, 1918.

Hall, A. J.: Epidemic Encephalitis. Brit. M. J., 2: 461, Oct. 26, 1918.

Batten, F. E., and Still, G. F.: Epidemic Stupor in Children. Lancet, 1: 636, May 4, 1918.

Tilney, F., and Riley, H. A.: Epidemic Encephalitis. Neurol. Bull. 2: 106, March, 1919.

Some of this material has come to my attention since this paper was read. A very recent publication (Urechia, C. I., and Rusdea, N.: Schizophrenoid Cerebral Syphilis. Encephale, Paris: December, 1921, Vol. 16, No. 10) from Roumania from an entirely different standpoint adds a stimulating confirmation. In fact, so many of their points are directly confirmatory that a brief abstract (J. A. M. A.) is worth appending. They "cite authorities and their own experience to confirm the point that the symptoms of dementia præcox may be observed in the course of syphilitic disease of the brain and general paresis. These schizophrenoid symptoms may be transient or durable. In one case, from onset to death, the clinical picture was that of dementia præcox through the entire six-year course. Cases are known up to twenty years' duration, and lumbar puncture or necropsy first cleared up the diagnosis. Catatonia is evidently the result of a certain injury of a certain part of the brain, but the morbid agent causing the injury need not always be the same."

File No. 12157. F. H. A Spaniard of 25, whose family history was negative save for the following interesting point: Two months previously his brother, following influenza, had seemed queer and indifferent, then excited and suicidal, possibly homicidal. He was committed to a state hospital, where he cleared up and was discharged after a few days.

P. I. The patient himself had apparently always been well until 10 days before admission, February 14, 1919, he developed influenza. It was thought at the Boston Homeopathic Hospital that he would not live, his temperature remaining at 105 for two days. He was disoriented and actively hallucinated, "fighting and killing Germans and singing a good deal." He was brought to the Psychopathic Hospital strapped to a stretcher.

*Examination February 24.* He was admitted shouting, fighting, imitating numerous animals, laughing, making odd gestures with his hands, accompanied by snatches of singing. *Physical examination* so far as could be obtained was negative except that there was an absence of pupilary reaction to light and the knee-jerks could not be obtained. The spinal fluid was entirely negative, as was also the blood Wassermann. The blood culture was negative, the leucocyte count was 22,000, 91 per cent being neutrophilic polymorphonuclears.

*February 25.* The patient continued to be resistive and totally inaccessible. He was markedly denudative, stripping off his clothes. He exhibited countless mannerisms, rolling about the floor grimacing, gesticulating, etc. He was untidy in his personal habits. He kept up a constant stream of unintelligible speech, and was extremely noisy, yelling and pounding on the door at times.

*February 26.* Temperature returned to normal. Patient still nude, noisy and untidy.

*February 27.* Condition as before. He showed typical stereotypy and negativism. He lay in fixed position, *e. g.*, facing the sun, and would not be otherwise. At times seemed euphoric, laughing and grimacing, buzzing and gesticulating.

*March 3.* The patient remained in the same state. He was very destructive to his clothing and was kept most of the time in prolonged baths, splashing, shouting and muttering unintelligibly. A small abscess on the left knee had healed, but another on the inner side of the left arm increased markedly and was opened under ether.

*March 5.* His agitated, resistive negativism, destructiveness, untidiness and noisiness continued. He failed rapidly and died at 3 o'clock. Results of an autopsy were not furnished by the county examiner.

CASE 2.—Again illustrating delirium schizophrenoides; schizophrenia with fairly complete reversibility, recovery occurring shortly and completely.

File No. 11484. *Abstract.* An attractive girl of 12 contracted influenza, followed by pneumonia, terminating three days prior to her admission. Simultaneously with her recovery she became acutely psychotic, laughing, crying, excitable and unmanageable, deluded and hallucinated.

At the hospital she sang or chattered incoherently and unintelligibly most of the time, was deluded, hallucinated, noisy, silly, stereotypic, autistic, negativistic, constantly denuding self. She was superficially accessible, but so irrelevant as to make examination impossible. She was committed with a diagnosis of dementia præcox. (Author's abstract at the Psychopathic Hospital):

"Upon her admission October 20, 1918, she was apathetic, speech disconnected and irrelevant and she admitted both auditory and tactile hallucinations. She grew more disturbed, disorderly, noisy, much confused at times and had sudden outbreaks of violence. After a few months she improved, was pleasant and agreeable and in fact seemed fairly normal. Discharged August 3, 1919. Condition: Improved. Diagnosis: Dementia præcox, hebephrenic type." (Subsequent history from Westborough State Hospital, Dr. W. E. Lang, Superintendent.)

CASE 3.—Illustrating again the syndrome of delirium schizophrenoides, the schizophrenia probably equal in reversibility to those preceding, for the recovery, while somewhat slower, was apparently more complete.

*Abstract.* The mother of capable school girl of 20 had a psychotic episode during a premature menopause, but was normal thereafter. The daughter herself had recently been burdened by new duties of considerable responsibility. She developed influenza and was ill ten days, but not delirious. A few days after arising she became depressed and fearful of death, immediately following a chat with a "religious fanatic of the neighborhood." A week later she suddenly stopped conversing, and remained mute thereafter except for a few brief quasi-normal periods. Conduct disorder was limited to such as running into the street in her night clothes, misusing the piano, etc.

Here she was apathetic, resistive, stolid, mute, completely inaccessible, hypokinetic, occasionally smiling in a silly fashion, and completely indifferent.

A unanimous diagnosis of dementia præcox was made by the staff. (Author's abstract at Psychopathic Hospital.)

(Subsequent history from Westborough State Hospital):

"She was admitted November 19, 1918. At that time she was mute, resistive and difficult to keep in bed. Later became talkative, silly and much deluded. About nine months after admission, however, she improved markedly, had fair insight into her condition, but remembered practically nothing from the time she had influenza at home until she found herself in this hospital. Discharged September 6, 1919. Condition: Recovered. Diagnosis: Dementia præcox, hebephrenic type." (W. E. Lang, Superintendent.)

CASE 4.—Still another similar case; but one in which the reversibility, although of high degree in point of completeness, seemed slow.

File No. 11478. *Abstract.* A Jewish boy of 17 had influenza lasting 14 days. Three days after he arose from bed he was observed to be whispering to himself. This gave way to talkativeness and evidence of delusionary ideation, and this in turn to a state of hyperkinesis, exhilaration, flight of ideas with occasional emotional swings, and possibly some hallucinations and fixed delusions, all accompanied with much excitement. All these symptoms simultaneously subsided rather quickly on the fifth day. At that time a provisional diagnosis was made of "dementia præcox, 4; manic depressive, manic, 3; undiagnosed psychosis, 2." The diagnosis of dementia præcox was based on the fact that much, if not all, of the patient's excitement was autistic, and he seemed to react little or none to external stimulation. After the fifth day he was accessible, pleasant, but amnesic for recent events.

Final diagnosis: "Undiagnosed psychosis, probably dementia præcox." (Author's abstract, Psychopathic Hospital.)

(Subsequent history from Westborough State Hospital):

"Admitted to this hospital October 26, 1918. He was talkative, noisy, untidy in habits, disturbed the other patients and would not keep himself properly clothed. His improvement was gradual and he was furloughed April 10, 1919. Condition: Improved. Since that time he has reported at the hospital several times and has seemed in practically normal mental condition." (W. E. Lang, Superintendent.)

CASE 5.—A case in which the schizophrenic process was somewhat less completely reversible than in those above.

This case was described in full in a previous article. The essential facts are these: A woman of 34 of negative family history and previously normal personality (including rather hyper-sociability) developed influenza and during the second week began to be grossly deluded and hallucinated, screaming, laughing and singing, claiming supernatural power and insisting that she was God and her child the devil. Her temperature fell to normal, but her psychosis continued and she was very disturbed for a time, followed by a period of inert apathy. All the while, however, she was markedly schizophrenic. After 30 days she had become quite well behaved, but showed depression, suspiciousness and some slowness of grasp. She was seen two weeks later and her attitude was distinctly paranoid although she and her mother insisted that she was entirely well. She was seen subsequently in the out-patient department and has seemed about the same.

CASE 6.—A similar case of incompletely reversible schizophrenia. Recovery in this case was incomplete like the preceding and occupied somewhat longer time.

File No. 1177. *Abstract.* An Irish girl of 25 with negative family history was the second born of twins and the stronger of the two. She had had to repeat the 3d and 4th grades but had progressed as far as the 7th. Her

habits were good. Her own temperament and personality are described by her sister as follows:

"She was always quiet and does not care to go out very much. She is sensitive but not suspicious. Cares very much to have everything neat and clean—is good natured and always wanted to please others. She is usually melancholy and when happy is abnormally so. She had a few good friends. Liked music, theatre and reading."

During November she had been feeling rather "melancholy" and was in bed two weeks. She was "exuberant" upon being allowed to leave her bed, but the same day she had a chill and seemed frightened, thought she would die. Did not seem well, although was fairly quiet. The next day was nervous and excited, seemed to stare and was self accusatory. Continued so several days, then asked to be sent to a hospital. Said that her "nerves" were sick. She was sent to a private hospital. There she slept better, but seemed more "excited," never unmanageable. Heard a bell and thought it was the police coming for her. Self persecutory and paranoid. Said that she would be blamed for disturbing the patients, although, as a matter of fact, she had been quiet. No evidences of memory impairment or "irrational talk."

Here she was from the start practically inaccessible, making no coherent replies to questions. At times she expressed paranoid delusions, and had some self-accusatory ideas. Hallucinations were not proved. Memory was not tested. Thought processes were shattered. There was marked blocking, frequent irrelevancy, and much incoherency. Blocking, however, predominated. Emotional tone seemed to be that of apathy and indifference; some thought apprehension was more marked. Motor status showed a restlessness over rather a wide range, but no gross misconduct.

The physical examination and laboratory findings were entirely negative.

The following notes afford something of a side light on the picture presented:

When the patient was first seen she explained that she was "just very silly." She would run up and down the hall in a silly manner. She was sorry, but she hoped we wouldn't punish her for such silliness. In a brief interview at that time she seemed, while not thoroughly normal, in a much less disturbed state than later. Thereafter, she was never accessible; only at times was it possible to get anything whatever from her. At these times she would approach the examiner and begin some such phrases as this: "You are not going to punish me for all those things, are you, Doctor?" When examiner would ask what things she referred to, no reply would be elicited and nothing could be obtained. On one such occasion the nurse immediately afterwards inquired from her what misconduct she referred to and she said that she had left the room in a disorderly condition. This sort of a reply is typical of the few fragments which we were able to obtain. For the most part she wandered about with an expression of dazed bewilderment, her mouth half open, her eyes staring. She was a good example of what some writers describe as confusion. She would

obey simple commands, but slowly and irresolutely. She reacted with considerable diffidence and outcries to lumbar puncture procedures, for example. She wandered up and down the corridors a great deal, standing about in a motionless attitude, gazing at what was going on about her, always in a sense of bewilderment and yet with a distinct element of interest in her environment.

At no time was she noticeably misbehaved.

*December 10.* Patient continually tried to get up and walk away, explaining that she was "tired out," "has arranged with that fellow—told those folks, I would be there." She would explain none of these remarks. Wore a dazed, uncomprehending expression. Told the examiner to talk to the nurses. "I am all right." Moved slowly and irresolutely, but was persistent in trying to escape from the room. Frequently stooped over to adjust her stockings, without concern or embarrassment. Fumbled the door knob and told the nurses she had been turned out.

*December 12.* "Much the same. Nothing could be learned from her. She returned only a bewildered stare."

*December 14.* "Mute except for occasional irrelevant and incoherent remarks, such as 'You know, Doctor, those people that were in to see me were—I thought that was—you know. . . . .' Wanders about mute, save for occasional fragments, *e. g.,* 'You won't accuse me of all those things, will you, Doctor?"

*December 16.* "Patient to-day wandering aimlessly about the ward. For the first time responded rather freely to questions. Is approximately oriented for time, precisely for person. Has a dazed and bewildered air. Memory is unimpaired. Tells of hallucinations and of difficulty in thinking. This difficulty in thinking is objectively marked, as she showed retardation and at times what seems to be blocking. She is slightly suspicious of the examiner. There is a moderate cyanosis." (Author's abstract, Psychopathic Hospital.)

Ring's Sanitarium gave the following: "Patient was committed to Westborough from here December 28, 1918, with the diagnosis of toxic psychosis. Her condition had cleared somewhat and she seemed a little brighter. She would not eat unless urged. Did not think she was ill at any time and wanted to be at work. She resisted all efforts they made to care for her."

(Subsequent history from Westborough State Hospital):

"On admission, December 30, 1918, she was quite confused and inactive, refusing to answer questions. During the next three months she became gradually brighter and took more notice of what transpired about her; was retarded in speech and motion. Her improvement was continuous but slow and gradual. On May 9, 1919, she was deported. Diagnosis: Dementia præcox, hebephrenic. Condition: Improved."

CASE 7.—Illustrating the least positive degree of reversibility of the cases of schizophrenia here cited. This is a fair example of schizophrenia deliriosa.

File No. 11842. Female, born in Nova Scotia, age 18.

The family history is quite negative, except for poverty. Patient herself was considered "a very smart child," but left school at 15, seventh grade, because of a sick mother. She was pregnant when married, at 16. In personality she was "not like other children," but quiet, "no friends," irritable, but industrious.

Prior to influenza, three weeks before admission, however, no trouble was suspected. During convalescence she complained of being ill, but poured the doctor's prescription out. Soon afterwards she began to talk much of various delusions centering around an idea that she had been kidnapped from rich people, brought up with poor ones, and that she has been thus swindled out of her money. Shortly before admission, she suddenly jumped from the window and showed other impulsive manifestations.

Here she was irritable, very suspicious, deluded, probably hallucinated, and showing great variation in emotional tone, from abusive excitement to complacent calm, and in motor status from narrow range hyperkinesis to quasi-normality.

Physical and laboratory examinations negative.

She was committed December 30, 1918, as schizophrenia paranoides. (Author's abstract at Psychopathic Hospital.)

(Subsequent history from Worcester State Hospital):

"Attitude and manner: Patient is quiet, rather indolent, sits in chair with her hand on the back of her head complaining of some pain, neat in dress, quiet in her demeanor, slow in her answers.

"Oriented for person and place but not for time. Fair grasp on surroundings. Memory for recent events poor, for remote events good. Limited grasp on school knowledge. Calculation poor. Reads slowly, laboriously, and does not comprehend. Writing legible.

"She says she was taken to the Psychopathic Hospital because she had what she considers a bad disease; thinks it has been the cause of her trouble. Says that she gets along well with everyone except her husband. Accepts her situation in life rather indifferently. Denies that she ever thought her father had money, says he is a poor, struggling man. Says that she remembers jumping out of the window because she was afraid of her father, but does not know why she was afraid of him. At times she seems rather confused and unable to answer physician's question and a few minutes later can give a direct answer. Very sober and never smiles, inclined to be depressed. At present lounges around, unoccupied, at times confused—smiles foolishly to herself." Diagnosis: Dementia præcox, hebephrenic.

CASE 8.—A case illustrating total lack of reversibility.

*Abstract.* Female, 27, Irish. Had influenza six months ago, in bed 13 weeks. Previously she was happy and sociable and had not been considered peculiar. Since that time she had been very much so; for example, "purchasing four hats and tearing them up." She also expressed paranoid delusions, but when examined for these in hospital assumed a

suspicious manner and answered evasively. She showed mild indifference, but no disturbance of speech, psychomotor activity or thought processes. She practically admitted hallucinations.

Physical examination was essentially negative. Laboratory examination was wholly negative, including spinal fluid, urine, blood serology and cytology.

Psychometric examination gave her a mental rating of 8.6, with variation total of 15.

(Subsequent history Westborough State Hospital):

"Admitted May 31, 1919, with a history of having been well until she had influenza in September, 1918. She was quiet in manner, depressed, tearful and at times practically mute. She grew gradually untidy, resistive and at times violent without provocation and was often seen laughing and talking in reaction to hallucinations. She continued to deteriorate. December 17, 1920, she was transferred to the Medfield State Hospital. Condition: Not improved." (Dr. Walter E. Lang, Superintendent.)

(Medfield State Hospital, Dr. E. H. Cohoon, Superintendent):

"Our records show that Bridget is a case of dementia præcox, hebephrenic. Her physical condition is excellent. Mentally she is deteriorated. Consciousness is clear, but she is oriented only for person. She is destructive to clothing and untidy in habits and person. She is both hallucinated and deluded." (Case 131 in series.)

(For conclusions see section preceding case histories, Deductions from Influenza Data.)

## DISCUSSION.

DR. WITTE.—I am interested in Dr. Menninger's paper, since I have in the last few years had considerable experience in that line. After the disastrous epidemic of influenza in the fall of 1918, and after the crest of the epidemic had receded, and the trouble had on the whole practically subsided, within a few weeks a considerable number of acutely delirious patients came under my observation and care. Some of the older people came in having a good bit of delirium with considerable psychomotor restlessness. With the younger people the delirium was intense, with deep confusion and great and sustained agitation, and very much similar to the grave delirium we formerly knew as acute delirium, grave delirium, or the typho delirium of Bell. And in a few, it must be said, some of the phenomena we associate with dementia præcox were also observed, but we did not look upon any of these cases as dementia præcox, but called it infection delirium, a poisoning of the cortical neurons by the toxines of the influenza bacteria. The first six weeks some 35 cases came in. Afterwards the number dwindled away rapidly. After experience with the first few cases I was able to assure the anxious friends of patients that they would get well, provided we could keep the patient alive. They did, without exception. We lost none of them; some were ill two or three months, however. One patient, whose trouble

was evidently aggravated by the flu, died, but as a result of the reflaming of an ancient tuberculosis. It had been quiescent evidently previous to the onset of the flu. Besides those coming to the hospital, I was called into consultation by other physicians in the neighborhood, and some of these cases were very grave, apparently from the very beginning, but they also recovered very nicely.

As to dementia præcox, I personally know that cases of real dementia præcox do get well, and this in a considerable number. In a state hospital, with all sorts of patients coming in under all sorts of conditions, and many of them really unfavorable, we could hardly expect to equal the record of Dr. McCarthy, who had exceptional opportunity in the selection of cases. I want to be put on record that often in a state hospital, with no opportunity for selection, and perhaps some other handicaps, the record is not at all unsatisfactory or discouraging. Someone said to me some time ago: "It must be disagreeable to care for these patients; there is no outcome." I said: "You are mistaken; we send many of them home cured." As a rule, we send home as well one out of every three patients, and during one biennial period our record of the recoveries was as high as 45 per cent, calculated on admissions within the two-year period, many of these being incurable from the very beginning, such as senile and organic cases. These cases who get well go home and remain well at home, provided they find improved conditions at home. It must be said that often adverse and irremediable conditions contribute to bringing on mental disturbance, and the patient who gets well at the hospital may be unable to maintain his mental health under old conditions at home, which helped to bring on the trouble in the first place.

# EMOTIONAL STATES AND ILLEGAL ACTS IN CONNECTION WITH SCHIZOPHRENIA.*

By JOHN RATHBONE OLIVER, M. D.

## Introduction.

Anyone who has labored through the "literature" dealing with the "psychobiology" of the late war must have noticed how many of these books and addresses deal with various types of emotional states or of peculiarities of behavior under great emotional stress, whether the books in question be written in English, French or German. It almost seems as if a great war had been necessary in order to supply us with the possibility of studying certain mental conditions that arise from the emotional overburdening of the personality. There is, however, another sphere of everyday life which is always with us, and in which interesting types of emotional states can be studied under conditions that permit an almost perfect opportunity for prolonged observation and analysis. There is another war, which is constantly being waged by the individual against society, in which the individual pits his intelligence, or his strength, or his shrewdness against the laws which society has evolved for its own protection. The thief who carries out a carefully planned burglary in the dead of night is subjected to the same emotional tension to which a soldier in the trenches is subjected when he creeps out with his few comrades for a night attack on the enemy. The man who commits murder, either with premeditation or on the spur of the moment, is exposed to emotional conditions similar to those of the soldier who kills an enemy in action. Indeed, the emotional stress and discharge connected with the commission of some crime is even more intense than that involved in the line of battle. In the latter, the soldier has a knowledge that he is acting under the orders of someone else, and that

* Read at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31, June 1, 2, 3, 1921.

he is surrounded by comrades who are sharing the same dangers and obeying the same orders. The man or the woman, however, who defies the laws of society, acts on his own initiative and frequently alone.

The station house and the jails in which people are detained, who have been arrested while their minds are still in a turmoil after the commission of some illegal act, are the true laboratories in which the results of emotional tension, either of short or of long duration, can be most satisfactorily studied. It is because my own work as Chief Medical Officer of the Supreme Bench of Baltimore has been done for many years in just this type of human laboratory that I am bold enough to present to you a brief comparison of certain emotional states with the emotional disturbances of schizophrenia.

I find that certain types of emotional states in the non-insane can be most easily explained by postulating a disturbance of the normal balance that exists between the various functions and secretions of the ductless glands. At the same time, in examining those symptoms of schizophrenia, which are confined to the affective life of the patient, I find a lack of emotional balance and a disturbance of affective equilibrium, which suggests to me the possibility that these schizophrenic states may also be caused by some faulty functioning of endocrine activity. The facts involved in this similarity between these two types of emotional states are, at least, suggestive. At least they may lead us to suspect in our schizophrenic patients an impaired endocrine equilibrium. And our efforts at treatment should logically be directed toward a restoration of this equilibrium by such means as are present in our power, while we look forward to even more powerful methods which the laboratory of the endocrinologists will surely some day bring us.

## Types of Illegal Acts Performed Under Great Emotional Stress.

It is a common experience for the medical officer of a criminal court to hear from some delinquent accused of a serious crime that he has actually no definite memory of the act committed and to discover that he is unable to give any dependable description of it. In the old days such statements were brushed aside as a useless

attempt by the accused to exonerate himself when all other excuses failed. At present, in following up statements such as these, one can often demonstrate most clearly that the delinquent is simply stating a fact; that at the time of his illegal action he acted under such an overcharge of emotion that the higher centers of cerebral activity ceased to function and that a more or less complete amnesia is really a symptom of certain types of intense emotional reaction. Loss of all reasoning power, of all power of mental restraint; imperviousness to external stimuli, however painful they may be; intense physical exhaustion followed by a leaden sleep lasting for hours; all these are outstanding characteristics of the emotional states that may be observed in men and women fresh from the commission of some serious crime. I have studied and analyzed a large group of people exhibiting such symptoms from among the continuous stream of delinquents who pass through my hands as court medical officer from day to day. This group comprises all sorts of offenders, from the shoplifter, who steals a few yards of silk ribbon, to the most brutal and gruesome of murderers. It includes many types of mental reaction, from the sensitive, highly organized, somewhat neurotic woman of the leisure class, to the dull, uneducated laboring man of the lowest level. But the symptoms are almost always the same. And one is impressed by the similarity in reaction, which one discovers in all these people of such widely divergent mentalities.

### A CASE.

On the morning of April 30, 1920, on a quiet street in the city of Baltimore and a few blocks from a police station, a woman of about 38 together with her married daughter of 20 were on their way to the station house, where they were to meet the woman's husband, whom she had had summoned by the magistrate on a charge of "nonsupport." As the woman and her daughter reached the corner of the street on the right hand side, going eastward, her husband, John Cort, age 38, appeared on the left hand side of the street, also going towards the station house. He attracted no notice by any unusual behavior, but it was remembered later on that he spoke to no one and did not seem to recognize some of his friends as they passed by. Seeing his wife on the opposite corner, he crossed to meet her. A few words were exchanged in an ordinary

tone of voice. Cort drew a revolver from his pocket and shot five times at his wife, who crumpled and fell at his feet. Then, opening a pocket knife, he bent over her and stabbed her once in the left side. There was no haste or excitement noticeable in his actions. After the shooting he turned quietly away and walked down the street towards the station house, staggering slightly, but otherwise apparently undisturbed. He made no attempt to hide either of his weapons, but held them openly in his hands.

Before the police could reach him he was seized by several enraged onlookers and somewhat roughly handled. He made no resistance. Two policemen finally rushed to meet him from the direction of the station house. He followed them without a word. At the station house he seemed dazed, but gave his name and address correctly to the desk sergeant. When placed in a cell he made no attempt to rearrange his disordered clothes, but lay down on a bench and fell into a deep sleep. He slept for three hours. When he awoke he asked where he was and what had happened. He had no recollection of having met his wife on the street, but knew that he had been on the way to meet her at the station house. When told that he had murdered her, he refused to believe the statement of the police. Transferred to the city jail after a preliminary hearing, he sat in a semi-dazed condition, from which he only gradually emerged. At the time of examination, 24 hours after the murder, his mind was still somewhat clouded and he was emotionally unstable, cried easily and showed persistent tremors of the extremities. This condition cleared up gradually and two days after the murder he was able to submit to a thorough examination.

This examination showed a heavy, well-built man of the laboring classes, with negative family history; with no neurotic traits in his childhood and no serious illnesses. Mentally he was, as regards intelligence, of a low level, although not mentally deficient. He could neither read nor write and had little education, but this was the result of a difficult economic situation at home and not of mental incapacity. His general information was good for a man of his type and he had behind him a history of exemplary conduct as a laborer. All the positions which he had held as foreman of construction gangs had been held for long periods and he had excellent recommendations from all his employers. On account of his illiter-

acy it was difficult to make any complete mental tests, but his powers of logical reasoning were intact and he might at the lowest be classified as subnormal with a mental coefficient between .78 and .8. In the emotional sphere he was somewhat badly balanced, yet he had never been prone to any habitual outbreaks of rage or ill-temper. His entire emotional life had centered about his wife and children. He was distinctly a "one-woman man." He had married early and had never looked at any woman except his wife. Had she been of the same emotional type, he might have lived happily with her for many years. Unfortunately, she was a "many-man woman" with definite sadistic tendencies. She rejoiced in her power over him and delighted in tormenting him. During the 19 years of their married life she had moved 38 times. He would return from work some evening to find her gone, leaving no address, having taken with her half of the children and most of the furniture and having left behind a few of the older offspring and a dismantled home. For these exhibitions of temperament she chose such days as Christmas eve or some other family festival. Her husband would then go in search of her; would find her often living under an assumed name, sometimes with another man. He would always plead with her to return, which she eventually did, as he earned good wages. After a few months of reunion she would repeat this performance. It is evident that these constant and reiterated emotional irritations gradually wrought up John Cort to an emotional condition which ended in a volcanic crisis. No doubt before the murder he may often have been in a condition of emotional stress in which he might have killed his tormentor, but either the weapon or the opportunity was lacking and the crisis passed. At the time of the murder, however, he was working on a job far out in the country. He had to return each night through a dangerous neighborhood where there had been a number of holdups, and acting on advice of his companions he bought a revolver for his personal protection. It was this revolver which he happened to have with him when he met his wife on her way to the station house.

A few weeks before the murder his wife left him again in the same way and he had found her living under an assumed name, as another man's wife, having several of the children with her. At the same time, as an example of her extreme barefaced love

of tormenting him, she actually had him summoned for nonsupport although she had left him of her own accord and was then living with another man.

These were the varying elements brought to bear upon John Cort, resulting in the emotional stress under which he acted at the time of the murder.

Repeated examinations showed that his amnesia was a real one. It was also retrograde in character and extended in a lessening level back to the incidents of the morning of the murder. He had no recollection of having fired the revolver—had no sensations of pain when attacked by the bystanders and had fallen into a sleep of absolute exhaustion as soon as he was locked up in a cell at the station house. It was evident that at the time of the murder intense emotional stress had thrown out of gear the man's normal mental balance. The endocrin equilibrium of his body had been over-whelmed by the action of the sympathetic division of the autonomic nervous system. The higher centers of consciousness had ceased to act and John Cort was like an automobile dashing along at a high speed with its chauffeur fallen in a faint over the steering wheel. In such a condition John Cort's actions were those of a mindless mechanism and at the moment of the murder he cannot be said either to have known right from wrong, or to have understood the nature and consequences of his act.

### Such Cases Show Disturbances of Equilibrium Between the Higher and the Lower Cerebro-Spinal Centers.

*Or to put it more scientifically, the impulses of the sympathetic neurones have over-whelmed the conditions established by the neurones of the cranial division of the autonomic system.*

When the various outstanding symptoms of such cases are analyzed it is evident that something has thrown the personality in question out of gear. To those of us who stood on the street corner and watched John Cort shoot and kill his wife he acted like a normal man going about his murderous business without excitement and with purposefulness and apparently deliberate intention. Nevertheless, at the moment of the murder—for some moments preceding it and for several hours following it, John Cort was more or less a mindless machine, which lived and breathed and

murdered, without any knowledge of this living, breathing, or murdering, reaching up to the spheres of conscious thought from which the personality that we called John Cort, usually, directs John Cort's actions. The lower centers of cerebro-spinal activity were not interfered with and they were sufficient to carry on the ordinary muscular reactions which ended in the murder; but the higher centers, which are phylogenetically a much later achievement in the human structure and by which we exercise the powers of memory, of intelligence and of forethought, these were, in some way, suspended in their activity and cut off from all inhibitory action on the other functions of the body. Usually, of course, higher and lower centers together with the divisions of the autonomic nervous system act and interact in perfect balance, but under intense emotional stress this balance is somehow destroyed; the inhibitory centers are cut off from the rest and the lower centers, that is, the sympathetic neurones, act alone.

How does this interference with the normal emotional balance come about? Something was known of it as long ago as the days of Pythagoras. He wrote: "Anger and hatred create a poison in the blood." Our modern studies in the functions of the ductless glands have carried on this thought of his. I do not, however, wish to enter into a discussion of the exact rôle played by the various divisions of the autonomic system and of the ductless glands in producing a mental state such as I have described, as arising under the stress of a great emotional over-burdening. I am not an endocrinologist and I have taken to heart a statement in the *Bulletin of Endocrinology,* Volume 3, page 55, in which the editor makes the following statement:

> There is no field of physiology that is so filled with speculation as is our field endocrinology. Investigators take a chance at being right rather than take the trouble of trying out their assumptions. No field has attracted a more diversely trained group of investigators: physiologists, pathologists, zoologists, physicians, psychologists and dentists are taking their turn. But when one attempts to study a subject about which one knows little, one is often led into fantastic speculations.

With this warning before my eyes, I am naturally chary of attempting to enter into the details of an analysis of these emotional states from an endocrinological point of view. But I can say, and I think with justice, that anyone who has studied such states of mind

as these will admit that the rôle played in them by the ductless glands is an important one, if not the most important one of all. (See Cannon's book on "Bodily Changes in Anger, Fear and Rage.")

Extreme emotional stress acts in some way upon the adrenal system, (which is composed of the posterior pituitary, plus the adrenals, plus the thyroid,) by way of the autonomic nervous system. The changes in the secretions of these glands under emotional stress produce certain physical and mental results. One of them is, without doubt, the destruction of the normal emotional balance, a disturbance in the normal chemical equilibrium between the secretions of the various ductless glands.

I may possibly be able to make my idea clearer to you by the use of a simile. We may compare an individual to a motorcar with its directing chauffeur. The higher centers of the brain, which consciously direct or inhibit the activities of the body are paralleled by the chauffeur at the steering wheel with his foot on the brake. The lower centers, which keep the vital processes of the body going without the interference of conscious thought, we may compare with the automobile itself, with its throbbing engines and its complex mechanism. Now, a man, who has suffered great emotional stress and whose endocrin balance has thus been disturbed, is like a motorcar running along a road with its chauffeur fallen in a dead faint over the steering wheel and without power to apply the brakes. That is, the power that guides or inhibits the mechanism is for the moment out of commission. If the road on which the automobile is running happens to be smooth; if no other automobiles chance to pass that way, our "chauffeurless" automobile may run along evenly without any accident, until the chauffeur comes to his senses, grasps the wheel and assumes direction of the mechanism once more. But if the road be somewhat uneven, if other vehicles are passing upon it, if in fact, one of a thousand possibilities arise, then our automobile may deviate from its course, may wreck itself in a ditch, may collide with other motors or carriages, may crash into the window of some dwelling place, and may in the end be the cause of some appalling tragedy. And then the chauffeur returns to consciousness to find that he is made responsible for the actions of a mechanism, which he was supposed to direct, but over which, in reality, he had not the slightest control.

### Symptoms of a Disturbed Emotional Balance.

My simile of the automobile is perhaps a somewhat rough and ready one, yet it illustrates sufficiently well the disturbed affective balance that one notes in such cases as that of John Cort. The outstanding symptoms of these emotional conditions may be briefly summarized as follows:

1. An amnesia of a more or less retrograde character, which is practically complete for the illegal act itself. Associated with this is a complete loss of the usual powers of restraint and loss of all conception of moral standards and of any adequate realization of the natural consequences of the act committed.

2. An imperviousness to external stimuli; that is, stimuli react on the peripheral nerves of the body but do not reach consciousness. There is a complete blocking of the nerve paths, whether they be efferent or afferent, that transmit sense impressions to or from the higher centers of the brain. Men in such conditions of emotional stress, after committing a murder, have been brutally beaten and maltreated by the indignant public and yet when the come to themselves have no recollection of having felt either pain or discomfort. Let me suggest a somewhat everyday means of illustrating this blocking of the nerve paths. You may study such conditions in a small way at the theater. The "moving pictures" are also good laboratories, but the darkness presents certain difficulties in controlling your results. Pick out some play at the theater that is intensely interesting and contains exciting and dramatic situations. Go first to the play yourself, so that you may know of the exciting situations and so that your own emotions may not interfere with the clearness of your observations. Having seen the play once, take with you a second time your "object" for the experiment preferably a young person, an impulsive girl or youth. Watch her unobtrusively during the dramatic action. You will know from having seen the play before what the most exciting parts are. When one of these situations is nearing its climax, lean over to your companion and say distinctly in her ear, "I am feeling very, very ill," or "A man behind you has just dropped dead," or even "Your back hair is falling down." She will not even hear you, or she may turn her head and look at you blankly for a second, but an instant afterwards her face will turn towards the stage again.

Under the stress of her emotions she is no longer able to make use of the higher centers of her brain. Her hearing functions properly; the sound waves of speech reach her ear and set in motion the afferent auditory paths, but the path of reaction is blocked. The line of conscious thought that the stimulus of your speech should bring into action doesn't start at all. Either the stimulus does not reach the higher centers or else the higher centers themselves are not functioning normally. You can test her sense of touch in the same way. You can prick her hand with a pin and she will not notice it. Or, if she is given to the bad habit of eating candy during the performance, wait until the most exciting situation in the play arises and then hand her some chocolate coated lumps of cotton and she will chew away on them contentedly until her mental stress lessens and she turns to you in a rage. Her sense of taste is intact, but the stimulation of her taste nerve-centers, which should tell her thinking-centers that something is wrong with what she is eating, does not react on her consciousness at all. In a word, her intense emotion has cut her off for the moment from the stimuli of the outside world. She is like poor John Cort, when beaten up by the enraged crowd after the murder of his wife—she is not physically conscious of what is happening to her. If, now, in her emotional state some impulse rises in her mind to do some act from which she would ordinarily shrink, she will surely follow that impulse, as it rises from the lower centers of her consciousness, and will follow it mechanically, blindly without being able to distinguish between right and wrong, or to know the nature and consequences of her act. (See Spencer's Case, 69 Maryland Reports.)

3. Another interesting characteristic of these emotional states is the phenomenon of "the summation" of stimuli, as described by Dr. George W. Crile in his "Origin and Nature of the Emotions." In plain words each emotional state of this type results in a constantly increasing ease and violence of further reactions. A patient, for instance, has been operated on three times for the same disease. At the time of the first anesthetizing the muscular reaction of the patient when coming under the anesthetic may not be particularly remarkable, but at the time of the second operation the muscular contractions and struggles are much greater and they summarily increase with each administration of the anesthetic. The same phenomenon is noticeable when a sensitive person is tickled. The

muscular contractions and struggles of such a ticklish person are much greater if the tickling is repeated five minutes after the first stimulation and repeated tickling so sensitizes the reaction that it finally becomes overwhelming. The same thing is true of John Cort. No doubt his wife's persistent and cruel tormenting had produced in him many emotional states in which the possibility of killing her had arisen in his mind. With each recurrence of these mental disturbances there was an increased ease and strength of reaction. One may compare such conditions with a portion of one's skin which has been gradually rubbed raw by some persistent external stimulus, say, for instance, a place on one's heel that has been rubbed constantly by an ill-fitting shoe. The sensitiveness of this spot increases with each renewed stimulus until it becomes so sore that the slightest touch or even the fear of a touch upon it will result in the discharge of muscular contractions of escape embracing the whole body and entirely out of proportion to the size and painfulness of the small sore spot. It was in this way, roughly speaking, that the constant tormenting of John Cort's wife resulted in the evolution of one definite "sore spot" in his mind, which became with each new irritation more and more capable of releasing a volcanic outbreak of emotional activity and its unhappy results.

4. In these emotional states the emotionally disturbed person is capable of excessive physical exertion without apparent fatigue. This is a truism to everyone who studied the mental and physical reactions of men on active service at the front. The fatigue poisons which accumulate in the muscles go on accumulating normally in such mental conditions, but the warnings that usually reach the higher centers of the brain and which translate themselves into feelings of fatigue or exhaustion are not consciously registered by the personality until actual physical exhaustion supervenes and the person drops unconscious where he stands and falls into a leaden sleep. This leads us to:—

5. The period of absolute mental and physical exhaustion which follow these emotional states. In the case of John Cort it is typical, that after committing the murder—after walking to the station house and giving himself up—after answering mechanically such questions as were put to him, he fell into a deep sleep which lasted for six hours and from which he awoke, not knowing where he was nor what had happened.

COMPARISON OF THESE EMOTIONAL STATES WITH THE DISTURBANCES OF SCHIZOPHRENIA IN THE AFFECTIVE SPHERE.

Let me now briefly sketch the emotional picture which all of us have studied so frequently in schizophrenic cases.

We are all familiar with the dulling of all emotional reactions in Schizophrenia. Bleuler calls this condition "Gemütliche Verblödung," or emotional idiocy. But there are many stages in this emotional degeneration and they are so varied that is is difficult to summarize them even briefly. However, one may distinguish the following elements in the process:

1. The absolute indifference in schizophrenic patients to emotional stimuli. Here it does not seem to be a question of disturbed emotional balance—not a disfunction, but rather a ceasing of function almost altogether.

2. The lack of unity in the expression of emotional reactions. The usual facial minicry that follows normal emotional reaction is not what one would be led to expect. The forehead and eyes of a schizophrenic patient may be drawn into lines of suffering and depression while the mouth is laughing and suggests a contented reaction.

3. Lack of what we may call proper emotional modification, that is, the external reactions of the patient's face and body do not follow the changing content of the patient's inner emotional mood. The patient's expression may be one of pleasure when he is subjected to a painful emotional experience.

4. Great changeableness of emotional reaction without adequate external cause.

5. A sluggishness that is very marked in the manner in which emotional reactions follow upon the ideas which excite them.

6. Lack of all regularity in the appearance of emotional reaction. The patient who appears absolutely uninterested in anything may be within an hour excited and interested.

7. Most noticeable, perhaps, of all is the manner in which those emotional reactions which regulate the ordinary intercourse of people with one another become disturbed in schizophrenic patients. For instance, the loss of all affection for those nearest and dearest to them; failure to understand the ordinary conventionalities of life, and loss of the sense of decency and of shame.

8. The emotional disturbance which Bleuler calls "an ambivalent reaction." For instance, in a schizophrenia patient the same experience may be connected with pleasant and unpleasant emotions at the same moment. The husband loves and hates his wife at the same time.

9. Most important for this discussion is the fact that the lower emotional instincts seem to suffer less deterioration than the higher emotional reactions; that is, in schizophrenic patients the emotional activity of the higher brain centers seem to suffer more rapid deterioration than those more mechanical instincts which we associate with the lower centers of the cerebro-spinal system.

Finally, we must not forget that in this process of emotional deterioration in schizophrenic patients it is absolutely sure that the ability of the mind to react to emotional stimuli has NOT BEEN ABSOLUTELY destroyed.

## Comparison of this Schizophrenic Emotional Idiocy with the Non-Schizophrenic Emotional States of Disturbed Endocrin Balance.

A comparison of the various gradations of schizophrenic emotional deterioration with the outstanding symptoms of the unbalanced emotional states already described in this paper, is somewhat difficult. Nevertheless, certain definite facts must impress themselves on the mind of any unbiased observer.

1. In both types of cases there is some definite disorganization in the whole system of emotional reactions. In the non-schizophrenic cases we know that the emotional states are the result of a temporary disturbance of the normal endocrine balance. Laboratory experiments on cases of extreme fear and similar reactions have satisfactorily proved this. In the schizophrenic cases, of course, the disturbance is not a temporary one, but a more or less *permanent* deterioration. I say "more or less" because I feel that it is unsatisfactory to map out in one's mind the progressive stages of what we call schizophrenia and then to fit each case that confronts us into this scheme, covering it with a sort of blanket diagnosis and tacking on to it a hopeless prognosis and an assurance of terminal dementia. Fortunately, there are many cases of schizophrenia which do not end in terminal dementia and in which the so-called

emotional idiocy never reaches its deepest level. There are various grades in schizophrenic affective disturbances just as there are various grades in the non-schizophrenic emotional states which we have described; so that it would not be fair to object that we are forcing the issue by comparing a temporary disturbance of emotional balance with an absolute emotional idiocy. There is perhaps no symptom of schizophrenia which varies as much in different cases as does the disturbance in the emotional sphere of the personalty's reactions.

2. In both types of cases we are brought face to face with a disturbance of emotional reaction which involves changes in the most fundamental traits of human personality. In both types the emotionally disturbed person loses his grasp on the ordinary conventionalities of life. His normal distinctions between right and wrong are destroyed or absolutely annihilated. The natural powers of control exercised by the emotional dread of punishment, or even of annihilation, disappear. Indeed, the deepest of all emotional reactions, the sexual attraction which we call love, is so completely disturbed that love changes to hate and the desire for the well-being and preservation of the loved one is transformed into cruel attempts at inflicting pain, or even into actual murder. It is not so difficult as it seems to trace *similarities* between the two groups of cases. On the other hand, there are distinct and instructive differences.

### Differences Between the Two Types of Cases.

In the case of the non-schizophrenic emotional disturbances, as has already been suggested, we are dealing with a temporary disturbance of a complicated emotional balance that is regulated by the autonomic nervous system and the ductless glands. Normally, when the emotional stress is removed, the balance returns to its usual level. It is like an elastic upright piece of thin steel bent to one side or the other by some impinging force, but which, when that force is removed, springs back to its former upright position. In schizophrenic cases, however, it appears as if there were some inherent weakness in the steel itself. When some external force impinges on the organically unsound metal, a force which would ordinarily not deflect a perfectly sound piece of steel, the unsound

metal not only deviates unduly from its upright equilibrium but does not return to its normal position when the external force has ceased to act. The more deeply one analyses the similarities between our two types of emotional disturbance, the more one is forced to believe that in schizophrenic emotional deterioration and in the disturbance of endocrin activity associated with it, there is some destructive element which does not appear in the non-schizophrenic emotional conditions. This is borne out by such pathological findings as those of Dr. Eva Rawlings, ("The Intellectual Status of Patients With Paranoid Dementia Præcox," in *The Archives of Neurology and Psychiatry* for March, 1921) who has noticed in her brain necropsies of schizophrenic patients a marked destruction of the nerve cells of the stellate layer of the brain. There are, therefore, in all probability more definitely organic changes in the schizophrenic anatomy than a mere temporary disturbance of endocrin balance. It is not so much a mere disturbance of endocrin balance as some definite cessation of function—some actual atrophy in one or more of the endocrin entities. In other words, in the non-schizophrenic emotional states one postulates a functional disturbance—a temporary impairment of endocrin balance, while in the schizophrenic reaction types it seems as if there had been some absolute destruction or some more or less permanent blocking in the organized chemical activity of one or more of the endocrin glands. The changes noted by Dr. Rawlings and others in certain layers of the brain cells may be secondary results of this failure in endocrin function.

### Additional Suggestive Facts Pointing to a Polyglandular Disturbance in Schizophrenia.

At any rate it appears that in both types of emotional states we are dealing with disturbances of endocrin secretion. There are, of course, an entire group of other facts which endocrinologists have gathered together in their effort to elucidate the genesis of schizophrenia from the standpoint of a polyglandular disorder. These may be briefly summarized as follows:

1. Loss of weight in schizophrenic patients.
2. Disturbances in their involuntary nervous system.
3. Abnormal pharmacological reactions.

(a) The hypodermic injection of atropin and pilocarpin does not produce the same physiological reactions in schizophrenic patients that is produced in normal individuals.

(b) The hypodermic injection of adrenalin, which normally raises the blood pressure, lowers the blood pressure of schizophrenics.

4. Coagulation of the blood is retarded in schizophrenic patients.

5. The Abderhalden reaction in the serum of schizophrenics is positive in males with testicle extract and is positive in females with extract of the ovaries. One cannot lay any great stress nowadays on the Abderhalden reaction as a diagnostic symptom of schizophrenia. A long series of Abderhalden serum reactions was worked out a few years ago in the laboratory of the Phipps Psychiatric Clinic in Baltimore without any definite results. There were positive reactions to testicles and ovaries among normal patients with other psychoses, as well as among those with marked schizophrenic symptoms. It must also be confessed that thus far the theory of the polyglandular origin of schizophrenia has not helped us to any noticeable extent in the treatment of schizophrenic patients. I have never seen any satisfactory statement of the general results obtained by efforts to treat schizophrenia from a polyglandular standpoint. I do know that the experiences of myself and many of my colleagues in this direction have not as yet met with any very marked success. Nevertheless, these negative results do not necessarily disprove the theory of disturbed endocrin function in schizophrenia. On the contrary, our comparison between the emotional disturbances in schizophrenic and non-schizophrenic patients, as I have tried to sketch it briefly in this paper, seems to me to point persistently to some as yet undiscovered rôle which the endocrin glands must play in the evolution of schizophrenic reaction types. This is an additional reason for not losing heart and for persisting in our attempt to approach at least the affective disturbances of schizophrenia from the therapeutic viewpoint of disturbed endocrin function.

As I have tried to show, the symptoms of the schizophrenic emotional disturbances point not so much to an impaired endocrin balance as to some definite cessation of function of one or more of the endocrin unities. Our present therapeutic methods may some day be able to restore a disturbed endocrin balance, but these same

methods may prove ineffectual in recreating the activity of an endocrin system that has ceased to function properly on account of the inhibition or even of the destruction of some element in the complex chemistry of the endocrin system.

## Conclusion.

This paper is the result of some five years of study, but no one is more conscious than I of the gaps in my research and reasoning. It is presented here with a deep realization of its failings. The warning of the editor of the *Bulletin of Endocrinology,* which I have already quoted, still rings in my ears. He said, you will remember, that no field has attracted a more diverse group of investigators than endocrinology. Physiologists, pathologists, zoologists, physicians, psychologists, and dentists are taking their turn. He does not mention students of legal medicine like myself. I am, therefore, adding to the various groups that have rushed in where even angels and trained endocrinologists fear to tread. But if zoologists and dentists have all taken their turn at a subject about which even the best of us knows but little, perhaps I may be forgiven if I have added another name and another type of investigator to this already overcrowded field. At least I shall have been in good company.

## DISCUSSION.

Dr. Lorenz.—It is very interesting the prominence given to the problem of endocrine disturbance in mental diseases during this entire session; however, I feel that we should be very careful in attempting interpretation. Well established facts bearing upon the endocrine system are really quite rare. Probably the most suggestive work has been that by Cannon and his associates, and it brings up an old question of which comes first, the emotional state or the bodily change associated with an emotional state. In our own work on sugar tolerance, this question arose and I must confess was entirely unanswered. That is, the disturbance in sugar tolerance found in some of our cases we were in doubt as to whether an emotional stress might have initiated an endocrine disturbance which in turn was manifested by disturbed sugar tolerance, or whether there was a primary endocrine disturbance without any emotional factor. This paper is an excellent product, indicating careful work and keen observation and suggesting a fruitful field of further research.

Dr. Witte.—It is with a pleasing sensation of satisfaction that I have listened to this paper, as well as others, on matters endocrine, for the

reason that I am not so lonely as I was once upon a time. As far back as twenty-five years ago I had the honor of reading a paper before our State Medical Society on "The Influence of the Body on the Mind," advancing and advocating the thesis that in the first place our mental activities are on an organic basis, and that the disorders taking place in the central nervous system, such as insanity and kindred ailments, very often have their seat originally even below the diaphragm. It was a time before we talked of endocrine or hormones, since little if anything was known about them. Then some ten years ago I had the honor of reading a paper before this Association at Atlantic City on "Psychological Observations in Involutional Melancholia," and the same ideas were advanced and contended for. I have seen no occasion since to recede from my position; more particularly that the affective side of our mental life is in a great measure depending upon influences coming from the glands and from the organs under the dominion of the *autonomic sympathetic nervous system,* and that in this realm we should seek for the beginnings of the disorder. We now begin to more fully know that the endocrines are the driving force for our emotional and, therefore, our volitional states, and it is a matter of gratification to have company in this particular view. It is such an extensive subject that I can only briefly refer to my own early and enduring views in the matter. I maintain that the affective part of our mental makeup is primitive, is basic and on which are reared the other realms, the thinking and the willing functions.

Way back in the faintest dawn in the early Eozoic Sea, life began in a little bit of jelly-like matter, which had the quality of *irritability;* which was capable of reacting to a stimulus coming from without, of being drawn by influences promotive of well being and of shrinking from those unfavorable to it. During the passing ages life reared on such humble beginnings expanded, increased, became intensified, and the capacity to respond to good and ill, became differentiated and integrated, until it is now that great part of us we call our feelings, our emotions, our passions, our affections, the directors and drivers to our thought and action; in other words, our *mind,* which, however, is still tied to primitive, nutritive functions anatomically located below the brain rind.

DR. GREENE.—It seems to me that after the large number of remarks on these subjects we are considering, the subjects are reduced to the old problem, that is, which was first, the chicken or the egg? Now, whether the action of the endocrine glands is due to the excitement and mental state, or whether the mental state is due to them, is the question we have to determine.

DR. STARKEY.—I believe that the question here is not so much which comes first, the chicken or the egg, but whether or not there is either a chicken or an egg. I have very little faith in these periods of amnesia which are said to immediately precede or follow commission of crime.

We speak volubly of the part played by the endocrines and the autonomic and sympathetic in this connection, but as a matter of fact we know little or nothing about it and our opinions have been highly colored by the claims set up by these malefactors and their unscrupulous attorneys. It has been so common for individuals who have committed offenses against society to come into court with their attorneys and make this claim of inability to remember what immediately preceded or succeeded the criminal act that we can anticipate it as a regular procedure, and the attitude of the courts, laity and even the medico-legal experts has been so influenced that it has become almost a tradition and I believe their state of amnesia has no other foundation than this tradition. These individuals realize they are in trouble and their great desire is to get out of their present embarrassing position and they do not hesitate to prevaricate to do so. There is no absolute way of knowing whether these states of amnesia exist. Therefore it is very easy for them to set up these claims. While I admit that it may be within the limits of possibility for this blank mental condition to exist as a great rarity, I am unwilling to accept it as a routine state of mind as the criminal and his attorneys would have us believe. I believe that this society should pause before accepting the claims of these individuals and their carefully built up medico-legal excuse for overt acts. I have had considerable medico-legal experience and have examined a great many persons who have set up this claim and have yet to encounter one in which I believe it to be justifiable.

Dr. Oliver.—I am very grateful to those who have spoken for what they have said. They have suggested many interesting matters. In the time allowed me, I was unable to read the paper as I had planned it, and could not place it before you in its original form. The question of which comes first, the chicken or the egg, I have not entered into because I do not know. I was simply trying to suggest to you that as emotional states which occur by surplusage of emotional reaction show lack of balance of the endocrines, so emotional results of the same kind based on similar states might be of similar origin. It is perfectly true that the criminal when he is face to face with punishment will try to elaborate an amnesia if he can. There is probably not one in twenty who has real amnesia. But there *are* cases of murders after long emotional strain in which there is, in my mind, no doubt of the real amnesia. This was found to be true during the war in the men who had been under long emotional strain. I am sorry I could not give you the history of a murder committed under emotional stress, which I think would have answered some of the questions, but which had to be omitted from the paper as read before you this morning.

# BLOOD CONSTITUENTS AND MENTAL STATE.*

By H. S. NEWCOMER, M. D.,

*Laboratory, Pennsylvania Hospital, Department for Mental and Nervous Diseases, West Philadelphia, Pa.*

It has been the experience of ourselves and others that patients with mental disease, but free from organic disease, give blood analyses which do not overstep the usual normal limits. When the patients are classified on the basis of symptom complex or psychomotor activity the amounts of the usually determined constituents do not show distinctive differences. It is, however, an attractive conception which proposes that certain reaction types might have greater scattering, greater variation, in the amounts of the various blood constituents than do other states.

From this viewpoint one might analyze the data given by Weston [1] for patients with manic-depressive and dementia præcox reactions. If in the case of his data for the bloods of ten patients of the first group we average the values for each constituent, sum without regard to sign the differences of the individual figures from the averages, express this sum as an average deviation in per cent and then average the percentage deviation of all the blood constituents reported, we obtain a figure, 6.2 per cent, expressing the average total deviation of all the constituents from the means. This figure is a numerical expression for the amount of scattering of the individual values from the respective means. In the case of the ten patients with dementia præcox reported by Weston, the average total deviation is 8.3 per cent, a larger figure than that for the manic-depressive group. If we wish to analyze the data somewhat more minutely we may consider figures for the manic-depressive, depressed and excited separately. They are respectively 6.6 and 6.1 per cent. For the catatonic and hebephrenic dementia præcox

---

* Read by title at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31, June 1, 2, 3, 1921.

[1] Weston, P. G., Archiv. Neur. and Psych. III, 1920 ,147.

individuals the figures are respectively 7.4 and 5.7 per cent. In each case those groups of patients with presumably greater psychomotor activity show within the group the lesser scattering of their blood constituents. It is, however, not fair from these small differences and the few cases to draw inferences, particularly since the comparison involves relations between different individuals.

In this laboratory an analysis has been made at weekly intervals over periods of from four to seven weeks, usually the latter, of the bloods of fifteen individuals showing quite clear cut reaction types.

| No. | Age | Reaction type | Psychomotor activity | Blood deviation | |
|---|---|---|---|---|---|
| 1 | 68 | Quiet catatonia | 0 | | 11.0 |
| 2 | 42 | D. P., quiet | + | | 6.4 |
| 3 | 62 | D. P., quiet | + | 8.5 | 8.4 |
| 4 | 41 | D. P., quiet | + | | 6.3 |
| 5 | 27 | D. P., quiet (excitements) | +(++++) | | 10.3 |
| 6 | 29 | D. P., excitements (quiet) | ++++(+) | | 7.1 |
| 7 | 28 | D. P. (?), moderate excitement | ++ | | 5.5 |
| 8 | 35 | Delirium convalescence | ++ | 7.5 | 6.3 |
| 9 | 82 | Senile, restless | ++ | | 10.9 |
| 10 | 79 | Senile, restless | ++ | | 7.7 |
| 11 | 45 | M. D., excitements & depresions. | ++, 0 | | 9.6 |
| 12 | 37 | M. D., excitement | +++ | | 6.8 |
| 13 | 25 | M. D., excitement | ++++ | 8.0 | 7.4 |
| 14 | 35 | M. D., excitement | ++++ | | 7.8 |
| 15 | 86 | M. D., excitement | ++++ | | 8.5 |
| | | | | | — |
| | | | | Av. | 8.0 |

There were determined the non-protein nitrogen, urea nitrogen, uric acid nitrogen, creatinine, sodium chloride, sugar,[2] and in half the cases the cholesterol.[3] The values found were within the expected normal limits. When averaged as above, but each patient separately so as to determine the variations shown by the individual rather than a group, the lowest average total deviation was 5.5 per cent and the highest was 11 per cent. The average of all the deviation figures was 8 per cent.

The patients are classified in the table according to reaction type of the psychosis and psychomotor activity. In the last column is

[2] Folin, O., and Wu, H., J. Biol. Chem., 1919, XXXVIII, 102.

[3] Weston, Paul G., and Kent, Grace Helen, J. Med. Research, XXVI, 1912, 531.

given the figure for per cent average total deviation of the blood constituents. It is possible to arrange the patients in the order of psychomotor activity and at the same time group them somewhat according to psychoses. It is seen by inspection of the table that there is little basis for making any distinction in the amount of scattering which their blood constituents show, though there is a tendency here as with the Weston group for the quiet dementia præcox to show more rather than less variation than the others. The differences are hardly significant.

In a search for other demonstrable differences in the blood stream or reaction to changes in its content we have added to it adrenalin by the intravenous injection of 0.1 mg. Following the injection there is usually within a minute a rise of about 50 mm. of mercury in the blood pressure, the return to normal occurring in four or five minutes. There was usually, but not always, within the next few minutes a moderate rise in the pulse, the leucocyte count and the blood sugar, but no change in the pupillary diameter. Five cases of dementia præcox did not show any differences distinguishing them from eight other individuals.

The intramuscular injection of 0.5 mg. pituitrin usually produced no appreciable rise in the blood pressure or pulse, but gave a moderate increase in the leucocyte count and blood sugar. Here there was likewise no distinction between dementia præcox and other states.

In our experience there has been no relation between the content of the blood stream or reaction to changes in it and mental state.

# EPILEPSY IN THE OFFSPRING OF EPILEPTICS.*

By D. A. THOM, M. D.,
*Former Pathologist to Monson State Hospital;*
*Chief of the Out-Patient Department, Boston Psychopathic Hospital;*
*Advisory Consultant to the U. S. P. H. Service,*

AND

GERNA S. WALKER,
*Former Social Service Worker to Monson State Hospital;*
*Head of Neuro-Psychiatric Section, Medical Social Service, District Office, United States Veterans' Bureau, Boston.*

Many neurologists and psychiatrists are interpreting convulsions, loss of consciousness, changes in personality, and associated mental deterioration, or the so-called syndrome, that goes to make up the condition termed epilepsy, in terms of some underlying pathological process affecting the brain or some other bodily organ, while others are seeking solution for the same problem in conflicts, wishfulfillments, repressions, dissociation, and other psychogenic conceptions.

Regardless of the views that one holds regarding this baffling condition, it will undoubtedly be of interest and quite worth while to check up our present knowledge of the inheritability of the convulsive disorders and to determine if this aspect of the problem, as presented in literature, has not been made to conform to a greater or less degree with our preconceived ideas on the subject of epilepsy.

In view of our past experience and present knowledge, we are quite convinced that epilepsy as such, does not exist and is by no means entitled to the classification of a disease entity. This old conception of epilepsy and the search for some definite pathogenic factor with a no less definite anatomical location, accounts to a great degree, for our present day ignorance regarding the etio-

* Read at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31, June 1, 2, 3, 1921.

logical factors producing convulsions and therapeutic measures with which to combat the same.

The syndrome which goes to make up the condition which has borne the name of epilepsy, is neither constant nor characteristic. The signs and symptoms may be as numerous and as varied as it is possible for any organic lesion, or psychogenic mechanism to produce, which need no definite pathology, no particular anatomical site, no specific toxin or pathogenic organism. The convulsions caused by lesions of the kidney are quite indistinguishable from those produced by an acute infection. In neither case, may they differ from the group called idiopathic epilepsy.

One cannot ignore the fact that an extremely high percentage of the cases which come to autopsy, have gross brain lesions and that many of these cases during life have been diagnosed as idiopathic epilepsy. It cannot be passed by unnoticed that the so-called epileptic personality is frequently not present in the epileptic and often found associated with other deteriorating diseases. Neither is epileptic dementia always a sequel to convulsive disorders. On the other hand, it is well recognized and definitely established that experiences to which excess of emotion is attached, frequently act as the etiological factor in producing convulsions.

In regard to the hereditary factors, again one feels that the present-day conception of the inheritability of epilepsy fails to represent the actual condition. The present study began at the Monson State Hospital in the spring of 1916, and was reported during the same year, calling attention to the fact that the first report was undoubtedly subject to many sources of error. Since that time the work has been carefully checked up and, we believe, represents, so far as any statistical work can, the actual findings in a large group of children born of epileptic parents.

The material dealt with in this study was obtained from the wards and records of the Monson State Hospital, supplemented by home visits on each case and a review of the case records of social agencies and hospitals which had known the families of these patients.

After a careful review of the available material one hundred and seventeen (117) cases were finally selected. The diagnosis of epilepsy had been determined in all these cases. They had all been married and had borne one or more living children.

The paper naturally divides itself into two parts, a study of the parents and a study of the offspring. An attempt has been made to correlate the findings in the two groups for the purpose of stimulating further observations along this and similar lines of work.

The total number of children resulting from these 117 matings was four hundred and thirty-one (431), of which two hundred and eighty (280) are still living and one hundred and fifty-one (151) are dead. These living children and their present mental status is the most important feature of the paper. Other data is included which appears to be of interest.

Of the parents seventy-six (76) were females; forty-one (41) males. Ninety-nine (99) cases were idiopathic; eighteen (18) organic. The onset of the convulsions began in fifty-nine (59) cases prior to marriage and in fifty-eight (58) cases after marriage. Of the total of 117 epileptic parents only twenty-two (22) gave birth to epileptic children.

## Parents.

Tables I and II have to do with the exciting cause of the convulsions in the idiopathic group; number I with the 49 cases where the onset of convulsions was prior to marriage; number II with the group where the convulsions followed marriage.

TABLE I.

Exciting Cause of Epilepsy—Onset Before Marriage.

| Cause | Total | Male | Female |
|---|---|---|---|
| Dog bite | 1 | .. | 1 |
| Drugs taken by mother to cause abortion | 1 | 1 | .. |
| Fright | 3 | 1 | 2 |
| Indigestion | 5 | 3 | 2 |
| "Illness with delirium" | 1 | .. | 1 |
| Menstruation | 9 | .. | 9 |
| Pneumonia | 1 | 1 | .. |
| Rickets | 2 | 1 | 1 |
| Sunstroke | 1 | .. | 1 |
| Teething | 1 | .. | 1 |
| Unknown | 24 | 5 | 19 |
| Total | 49 | 12 | 37 |

TABLE II.

EXCITING CAUSE OF EPILEPSY—ONSET AFTER MARRIAGE.

| Cause | Total | Male | Femal |
|---|---|---|---|
| Alcohol | 13 | 12 | 1 |
| Fright | 1 | 1 | .. |
| Indigestion | 1 | 1 | .. |
| Mental worry | 5 | 2 | 3 |
| Mental shock | 3 | .. | 3 |
| Menopause | 2 | .. | 2 |
| "Over excitement" | 1 | .. | 1 |
| Operation for prostate | 1 | 1 | .. |
| Pregnancy | 11 | .. | 11 |
| Sunstroke | 1 | 1 | .. |
| "Too much sexual intercourse" | 1 | 1 | .. |
| "Too much headache medicine" | 1 | .. | 1 |
| Unknown | 9 | 2 | 7 |
| Total | 50 | 21 | 29 |

This arbitrary division quite naturally gives us two distinct groups of convulsive disorders. The average age of onset of the convulsions in Group I is 11.4 years, while in Group II it is 35.5 years. It will be noted that the etiological factors are quite different.

Table III deals in the same way with the eighteen (18) cases which belong to the organic group.

TABLE III.

CAUSES OF EPILEPSY IN THE ORGANIC GROUP.

| Onset before marriage | | Onset after marriage | | |
|---|---|---|---|---|
| Cause | No. | Cause | No. | Total |
| Head injury | 7 | Head injury | 3 | 10 |
| Injury to spine | 1 | .. | .. | 1 |
| Encephalitis | 1 | .. | .. | 1 |
| Infantile paralysis | 1 | .. | .. | 1 |
| .. | .. | Syphilis | 2 | 2 |
| .. | .. | Arteriosclerosis | 1 | 1 |
| .. | .. | Cardio-renal | 2 | 2 |
| Total | 10 | .. | 8 | 18 |

The age of onset in relation to marriage may be stated as follows. Of the 59 cases where the epilepsy began before mar-

riage, the duration is unknown in 2 females. The average length of duration before marriage in 16 males is 13.4 years, and in the remaining 41 females 10.6 years. The average duration before marriage was 12 years.

Of the 58 cases having the onset of their epilepsy after marriage, the number of years elapsing between marriage and the onset of the epilepsy is unknown in one male. The average number of years between the marriage and the onset of the epilepsy in the remaining 24 males is 14.4 years and in the 33 females 10.6 years. In the 57 cases the average number of years between marriage and the onset of the disease was 12.5 years.

It may be noted here that the number of females marrying with a knowledge of their epilepsy far exceeded the males (43 females and 16 males). This indicates that it is undoubtedly very much easier for the woman, who lives a comparatively sheltered life, to conceal the fact of her epilepsy than for the man.

TABLE IV.

AGE AT ONSET OF EPILEPSY.

| Age | No. | Per cent |
|---|---|---|
| Under 3 months | 4 | 3.4 |
| 3 months—1 year | 1 | .9 |
| 1 year—2 years | 7 | 6. |
| 2 years—5 years | 3 | 2.6 |
| 5 years—10 years | 7 | 6. |
| 10 years—17 years | 27 | 23.1 |
| 17 years—25 years | 25 | 21.4 |
| 25 years—30 years | 8 | 6.8 |
| 30 years—40 years | 12 | 10.3 |
| 40 years—50 years | 11 | 9.4 |
| 50 years—60 years | 5 | 4.3 |
| 60 years—70 years | 4 | 3.4 |
| Unknown | 3 | 2.6 |
| Total | 117 | |

Table IV simply presents the age at onset of the convulsions in the two groups, idiopathic and organic, and will be drawn upon later when discussing the children. There is no age exempt from the convulsive disorders.

TABLE V.

SEX PARENTAGE OF 22 CHILDREN WITH HISTORY OF CONVULSIONS.

| | | |
|---|---|---|
| Male Epileptics having Children with a History of Convulsions... | 6 | 27.2 |
| Female Epileptics having Children with a History of Convulsions. | 16 | 72.7 |
| Total[1] ..... | 22 | |

Table V indicates the sex parentage of the 22 offspring who at some time, past or present, had convulsions, and bears out the statement made in a previous paper,[2] that not only is the convulsive tendency manifested at an earlier date when transmitted by the female parent, but that the epileptic mother is much more likely to transmit traits of instability than the father.

In studying the heredity of the one hundred and seventeen (117) parents it was found that *in only 8 cases* was there a history of convulsions in the parents or grandparents of these epileptics.

## OFFSPRING.

The following tables will deal exclusively with the mental defects and other observations of interest in the offspring of the parents which we have just considered.

About one in six of every adult patient who enters the Monson State Hospital has been married and three-fourths of these matings have resulted in one or more offspring. The average number of children to each marriage in this particular group under consideration was 3.7 (117 matings; 431 children).

Of this total of four hundred and thirty-one children (431), two hundred and eighty (280) are still living, one hundred and fifty-one (151) dead. The causes of death and age at death, of this latter group, are given in Tables VI and VII.

[1] One male epileptic had 3 children who died of convulsions. One female epileptic had 1 child who died of convulsions and 1 living child who gave a history of having had convulsions. Two female epileptics each had 2 children who died of convulsions. One female epileptic had 7 children who died of convulsions.

[2] Boston Medical and Surgical Journal, Sept. 23, 1915. The Relation between the Genetic Factors and the Age at Onset in 157 Hereditary Epileptics.

## TABLE VI.

CAUSE OF DEATH OF 151 CHILDREN.

| Cause | Total | Male | Female | Unknown |
|---|---|---|---|---|
| Convulsions | 19 | 9 | 2 | 8 |
| Diseases of childhood | 16 | 8 | 8 | — |
| Gastro-intestinal disorders | 17 | 12 | 5 | — |
| Influenza | 4 | 1 | 3 | — |
| Pneumonia | 4 | — | 3 | 1 |
| Cardiac disease | 3 | 1 | 2 | — |
| Marasmus | 39 | 24 | 10 | 5 |
| Meningitis | 4 | 2 | 2 | — |
| Encephalitis | 4 | — | 4 | — |
| Diabetes | 1 | — | 1 | — |
| Septicæmia | 3 | — | 2 | 1 |
| Accidental death | 11 | 5 | 5 | 1 |
| Unknown[3] | 26 | 10 | 9 | 7 |
| Total | 151 | 72 | 56 | 23 |

## TABLE VII.

AGE AT DEATH OF 151 CHILDREN.

| Age | Total | Male | Female | Unknown |
|---|---|---|---|---|
| Under 6 months | 80 | 39 | 19 | 22 |
| 6 months—1 year | 18 | 15 | 2 | 1 |
| 1 year—3 years | 22 | 12 | 10 | — |
| 3 years—5 years | 8 | 1 | 7 | — |
| 5 years—10 years | 4 | — | 4 | — |
| 10 years—15 years | 4 | 1 | 3 | — |
| 15 years—20 years | 1 | — | 1 | — |
| 20 years—25 years | 2 | 2 | — | — |
| 25 years—30 years | 4 | 2 | 2 | — |
| 30 years—35 years | 3 | — | 3 | — |
| 35 years—40 years | — | — | — | — |
| 40 years—50 years | 1 | — | 1 | — |
| Unknown | 4 | — | 4 | — |
| Total | 151 | 72 | 56 | 23 |

AGE AT DEATH—151 CHILDREN.

Under 6 months..... 52 per cent.
Under 1 year..... 64 per cent.
Under 3 years..... 78 per cent.

[3] In 21 of the 26 cases with an unknown cause of death, the cause was definitely stated as *not convulsions*. This leaves 5 cases in which there is a possibility that convulsions may have been the cause.

These tables are of interest to compare with tables charted from the offspring of normal individuals. In only 19 cases could the cause of death be contributed to convulsions but, as the note points out, there are five cases where the cause of death, as due to convulsions, could not be ruled out.

TABLE VIII.

AGE OF 280 LIVING CHILDREN.

| Age | Total | Male | Female |
|---|---|---|---|
| Under 1 year | 1 | — | 1 |
| 1—3 years | 1 | — | 1 |
| 3—5 years | 8 | 5 | 3 |
| 5—10 years | 31 | 12 | 19 |
| 10—15 years | 51 | 32 | 19 |
| 15—20 years | 49 | 21 | 28 |
| 20—25 years | 46 | 26 | 20 |
| 25—30 years | 25 | 12 | 13 |
| 30—35 years | 20 | 7 | 13 |
| 35—40 years | 15 | 9 | 6 |
| 40—50 years | 12 | 7 | 5 |
| 50—60 years | 3 | 2 | 1 |
| Unknown[4] | 18 | 10 | 8 |
| Total | 280 | 143 | 137 |

In Table VIII we find the present age of the 280 living children recorded under the various age groups. The point of interest here is the fact that two-thirds of these living children are past the age of 25, where between 75 per cent and 85 per cent of the epilepsies begin.

TABLE IX.

| | Echeverria | Thom |
|---|---|---|
| Number of matings | 136 | 117 |
| Number of children | 531 | 431 |
| Died: in convulsions | 195 | 19 |
| Other disease | 27 | 132 |
| Developed Epilepsy | 78 | 14 |
| Insanity | 11 | 2 |
| Feeble-minded | 18 | 14 |
| Normal | 105 | 238 |

[4] Eight of the 10 males—age unknown—are over 30 years of age. All of the 8 females—age unknown—are over 30 years of age.

Table IX is recorded briefly in parallel columns, the findings of Echeverria[5] and those of this study. As the statistics of Echeverria are quoted extensively on the inheritability of epilepsy, it seems worth while to make this comparison, leaving the discussion of this point for another part of the paper.

TABLE X.

SUMMARY OF CHILDREN WITH HISTORY OF CONVULSIONS IN IDIOPATHIC AND ORGANIC GROUPS.

| | Idiopathic | Organic | Total |
|---|---|---|---|
| Number of epileptic parents | 99 | 18 | 117 |
| Number of children | 367 | 64 | 431 |
| Living | 241 | 39 | 280 |
| Dead | 126 | 25 | 151 |
| Number of children with convulsions | 25 | 8 | 33 |
| Living | 14 | — | 14 |
| Dead | 11 | 8 | 19 |

Nine and four-tenths per cent of the total number of the children of the idiopathic cases had a history of convulsions. Eight and seven-tenths per cent of the dead children of the idiopathic died of convulsions.

Twelve and five-tenths per cent of the total number of children of the organic group had a history of convulsions. Thirty-two per cent of the dead children of this group died of convulsions.

Having considered in Table X these offspring as one group, we will now divide them up; first, those cases where epilepsy in the parents was considered the idiopathic type and, secondly, the offspring of the organic group. Here we note that convulsions among the offspring of the idiopathic are even less frequent than among those of the organic. Whether or no this statement would hold true in a larger series of cases might be questioned, but personally we believe that it would, or at least that the difference would be of minor importance.

[5] Journal of Mental Science, 1887.

TABLE XI.

Total number of cases with epilepsy before marriage, 59.

| Total number of these parents with children having convulsions | Total number of children | Total number of children having convulsions |
|---|---|---|
| 9 | 39 | A. Living..... 7<br>B. Dead..... 3 |

Total number of cases with epilepsy after marriage, 58.

| Total number of these parents with children having convulsions | Total number of children | Total number of children having convulsions |
|---|---|---|
| 13 | 44 | A. Living..... 7<br>B. Dead.....16 |

Table XI presents several points worthy of note, which are difficult to indicate by the statistical method. We here divided our 117 cases again into the same groups as shown in Tables I and II, namely, those where the convulsions began before marriage and those were marriage preceded the convulsions. Of the 59 cases belonging to the former group only 9 had children who had developed convulsions up to the time that this study was made, while of the 58 belonging to the latter group, 13 had children who had had convulsions. The figures are most striking when we consider that of the parents whose offspring give a history of convulsions, the 9 having convulsions before marriage, bore a total of 39 children, of whom 10, or approximately 25 per cent, had convulsions, while 23 or nearly 50 per cent of the 44 children borne by the 13 parents whose convulsions appeared after marriage, gave a history of convulsions.

In looking over Table XII it is quite apparent that the parent suffering from the convulsive disorder cannot be held entirely responsible for the mental defects in the offspring. The mate in many instances, was either excessively alcoholic, syphilitic or feeble-minded and contributed his share to the instability of the offspring.

TABLE XII.

22 Parents With History of Convulsions in Children.

| No. | Heredity | Exciting cause | Relation of epilepsy to marriage | Offspring |
|---|---|---|---|---|
| 1 | Mother nervous. Father alcoholic and syphilitic. Pat. uncle alcoholic. Spouse apparently normal. | Unknown. | 2 mos. after marriage. | (1 boy and 2 girls.) 1 child died of convulsions at 1½ years. |
| 2 | None. Spouse normal. | Alcohol. | 18 yrs. after marriage. | (2 boys and 2 girls.) 1 child died of convulsions at 3 weeks. |
| 3 | Father insane. Spouse normal. | Fright and quarrel. | ? of yrs. after marriage. | (2 girls.) 1 child had conv. at 24—none since—present age 32. This child's 2d child has had conv. since teething—now 6. |
| 4 | Father epileptic. Mother migraine. Spouse apparently normal. | Unknown. | 6 yrs. before marriage. | (4 boys and 7 girls.) 8th child has had conv. since 13—present age 19. |
| 5 | Mother epileptic. Pat. grandfather insane. Pat. uncle insane. 2 pat. great uncles and 2 pat. great aunts, suicidal. Spouse normal. | Pregnancy. | 2 yrs. after marriage. | (3 boys.) Oldest child has had conv. since 12 yrs. of age. Present age 23. |
| 6 | Mother very nervous. Mat. cousin epileptic. Spouse alcoholic. | Fright. | 4 yrs. before marriage. | (3 boys and 4 girls.) Oldest child has had conv. since a small child—now 25. |
| 7 | Mat. cousin insane. Spouse normal. | Alcohol. | 5 yrs. after marriage. | (1 boy and 1 girl.) 2d child conv. from 1st to 4th yr.—none since—now 10. |
| 8 | None. Spouse alcoholic and immoral. | Pregnancy. | 1 yr. after marriage. | (1 boy, 1 girl and 3 sex unk.) 1 child died of conv. at 8 or 9 mos. A 2d had conv. with chickenpox at 14—none since—now 16 and feeble-minded. |

TABLE XII.—CONTINUED.

| No. | Heredity | Exciting cause | Relation of epilepsy to marriage | Offspring |
|---|---|---|---|---|
| 9 | Mother epileptic. Mat. aunt epileptic. Mat. grandfather conv. as a boy. Parents are cousins. Sister migraine. 2 or 3 pat. siblings died conv. Spouse alcoholic and did not support family. | Unknown. | 24 yrs. before marriage. | (3 boys.) 2 children died of conv. at 5 mos. and 13 mos. |
| 10 | Mother epileptic. Mat. great grandfather epileptic. Mat. grandmother epileptic and insane. Mat. uncle chorea—in prison for robbery. Brother epileptic. His 3 sons insane and 1 daughter insane; 2 sons feeble-minded. Spouse feeble-minded and syphilitic. | Over excitement. | 15 yrs. after marriage. | (1 boy.) Only child has had conv. since 3 yrs.—now 21. |
| 11 | Mother epileptic. Married 3 times. Father of 3d child immoral and a suicide. | Illness with delirium. | 9½ yrs. before marriage. | (1 boy and 2 girls.) 3d child has had conv. since early teens—now 19. |
| 12 | None. Spouse's sister epileptic. Spouse normal. | Fright. | 8 yrs. before marriage. | (1 boy and 1 girl.) 2d child had conv. at 10 years—none since—now 12. |
| 13 | Mother migraine. Spouse normal. | | 28 yrs. after marriage. | (2 boys.) 2d child has had conv. since 2 yrs.—now 38 or 39 yrs. |
| 14 | Sister epileptic. Spouse normal. | | 1 yr. after marriage. | (2 boys and 1 girl.) 2 children died of conv. at 3 mos. and 7 mos. |

TABLE XII.—CONTINUED.

| No. | Heredity | Exciting cause | Relation of epilepsy to marriage | Offspring |
|---|---|---|---|---|
| 15 | Brother insane. Spouse apparently normal. | Nephritis. | ? of yrs. before marriage. | (1 girl and 7 sex unk.) 7 children died of conv. under 6 mos. |
| 16 | None. Married twice. Children by 2 men, not her husband, between marriages. | Pregnancy. | 1 yr. after marriage. | (1 boy and 2 girls.) Oldest child had conv. "as an infant"—none since—now 25. |
| 17 | None. Spouse normal. | Alcohol. | 20 yrs. marriage. | (4 boys and 1 girl.) 3 children died of conv. at 8 mos. and 2 at 5 weeks. |
| 18 | None. Spouse defective, shiftless, and cannot hold a job. | Menstruation. | 5 yrs. before marriage. | (1 boy and 1 girl.) 2d child has had conv. since birth and is blind—now 4 yrs. |
| 19 | None. Spouse immoral and alcoholic. | Alcohol. | 5 yrs. after marriage. | (2 boys and 3 girls.) 1 child died of conv. at 1½ yrs. |
| 20 | Father alcoholic and a bigamist. Mother insane. Spouse apparently normal. | Unknown. | 11 yrs. before marriage. | (2 boys.) Oldest child has had conv. since a small boy—now 12 yrs. |
| 21 | None. Spouse syphilitic. | Syphilis. | 12 yrs. after marriage. | (2 boys.) 1 child died of conv. at 10½ mos. |
| 22 | Two distant cousins insane. Spouse apparently normal. | Menstruation. | 3 yrs. before marriage. | (6 boys and 2 girls.) 7th child had conv. while teething—none since—now 9 yrs. |

## Conclusion.

In conclusion we would lay stress on the following points:

1. Epilepsy as a disease is not transmitted directly from parent to offspring, but rather, we believe, that it is the nervous system lacking in the normal stability that is inherited and the manifestations of this instability may be mental deficiency of all degrees, insanity of various types, neurological and psychopathic disorders, convulsions from various exciting causes, which would have little or no effect on a normally developed nervous system.

2. These mental and nervous disorders are less frequently found in the offspring of the so-called epileptic than we have heretofore believed and the future of the offspring borne of epileptic parents is not as hopeless as the pessimistic authorities on heredity record.

3. Maternal defects are more frequently manifested in some form or other in the offspring than are the paternal defects and, when present, are more likely to appear at an earlier age.

4. It was found that in only a few cases were we dealing with "pure cultures of epilepsy." In most instances contamination was brought about by some defect in the other partner such as feeble-mindedness, insanity, alcohol and syphilis.

5. In this study it was found that convulsive disorders were more frequently found in the offspring of the organic group as compared with the idiopathic group. The organic group is, however, so small that too much consideration cannot be given to this point. It should, nevertheless, stimulate further inquiry relative to the offspring of normal individuals and a larger group of organic cases.

6. This study indicates the necessity of research relative to the transmissibility of genetic defects in both epilepsy and psychiatry. We feel that the dogmatism regarding this aspect of mental diseases has not been justified.

## DISCUSSION.

Dr. Hodskin.—It is rather difficult to discuss Dr. Thom's paper because he is dealing with matters of fact. There is one thing that we must remember in epilepsy: That it is not a disease—it is simply a syndrome or a manifestation of some other cause. Another thing we must keep in mind is that epilepsy is a disease of infancy and childhood. In convulsions coming on later in life, if you can get a definite history of the patient's infancy

you will find that that person had convulsions in infancy or childhood. I have looked up some normal families, so-called, in regard to the convulsions in their offspring, and so far as I have gone, twenty or thirty of them altogether, the percentage of convulsions has run higher than the convulsions in the offspring of epileptics.

DR. MYERSON.—I am interested in this work because I think that nowhere have we muddled quite so badly as in the discussion of the inheritance of mental disease. I think that there are three words that have harmed psychiatry and these are "insanity," "feeble-mindedness," and "epilepsy." Not one of these words relates to an entity and there is no inheritance of insanity, feeble-mindedness or epilepsy simply because there is no unit corresponding to these words. We have to collect statistics on the various types of mental diseases, the various types of feeble-mindedness, and the various types of epilepsy before we get any result worth while, and we must compare these statistics with those concerning so-called normal people. Coming down to epilepsy, very often in practice we see patients who have epileptic attacks once or twice in their life and never have any more. Further, one sees one epileptic in a family of normal people, and one sees epileptics begetting families of normal people. If Dr. Thom could compare his figures as to the incidence of convulsions in the descendants of the epileptic with the incidence of convulsions in the descendants of the normal he would have something worth while talking about. The epileptic group of symptoms occurs in many mental diseases and in many organic brain diseases, and in the vast majority of cases represents, to my mind, an accident, trauma, or infection, and in such cases has no hereditary value whatever.

DR. THOM.—In reviewing the ancestry of the 117 cases which we have just been discussing, I found that there were evidence of direct heredity in but nineteen instances, that is, in going back, we found evidence of direct heredity in nineteen cases, and in going forward, twenty-three cases. It may be well to note that in discussing the offspring of the 117 cases, 66 per cent of these children were over twenty-five years of age or past what we might call the epileptic zone, where the 85 per cent of all the so-called epilepsies begin. A further study of this same group of cases in five years would undoubtedly bring to light additional information of value.

# ENVIRONMENT AS IT INFLUENCES THE DEVELOPMENT OF THE JUVENILE DELINQUENT.*

By PERCY L. DODGE, M. D., Boston, Mass.

In writing on environment as it influences the development of the juvenile delinquent, I realize that there are many conditions included in the word environment, any one of which would afford material for a paper far too lengthy to be given at this time. I can, therefore, touch only upon many things going to make up the environment, so very often the factor that starts the child on the road to delinquency.

The delinquent arouses our sympathy because we realize that he has not had the best chance in life, perhaps because of poor physical health. He may be a cripple, he may have some chronic disease, or as is true in a large percentage of cases he may be backward mentally or even feeble-minded. Dr. A. Warren Stearns has brought this clearly before us in his paper—"What Recent Investigations Have Shown to be the Relation between Mental Disease and Crime." He states: "I think that every person who is called a criminal is now thought to have some mental variation from the normal. That variation may be slight, of course, but while it seems only too obvious, it is necessary to insist upon some attention being paid to this relation. Heredity must be given an equal consideration."

I wish to confine myself to the environment, the home and the neighborhood, which may be likened to the soil, the climate, and the sunshine which causes the healthy seed to spring forth and bear fruit. Unless the tree is pruned and kept healthy, the fruit will be bad; unless the soil is enrichened and tilled, the good seed will die and weeds will grow.

Of 58 cases of conduct disorder considered at the Boston Psychopathic Hospital, 42 are girls, 16 boys. The large percentage of girls can be accounted for by the fact that most of them

* Read at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31, June 1, 2, 3, 1921.

are sex offenders. Of the 42 girls, 12 were up to normal mental intelligence, 2 were above normal intelligence 1 to 5 years, 25 were below normal intelligence 1 to 5 years.

Of the 42 girls, 25 developed the same delinquences as were present in the home; 17 developed different delinquencies than were actually present in the home, but the neighborhood environment easily afforded the stimulation and development of such delinquencies. They received little instruction or proper bringing up and were allowed to go out in the neighborhood where the influences were bad. Many of these 17 had drunkards for parents, some had to work like slaves and were finally driven from home to search for freedom, only falling into worse conditions at the hands of some person who for the moment appeared kind to them.

Of the 16 boys, 13 developed the same delinquencies, lying, stealing, truancies, etc., while 3 developed other delinquencies because of poor supervision and the fact that they associated with bad gangs in the neighborhood.

It is true that character is made up of impressions received during the formative period of childhood and these are closely woven into the life and will govern the actions of that child when he becomes more or less of a free agent as he grows older.

A home where morals are loose, where profane and obscene language is used, where drunkenness is rampant, where modesty never is given a thought, where even the chastity of the children is not considered, cannot help but turn out delinquent children.

The following case illustrates this sort of a home and accentuates the awfulness of such a situation:

CASE No. 10150 (Colored).—Father died in 1911 of heart trouble. Was illiterate and was reported to have been intemperate and immoral. Mother illiterate, drinks to excess, is immoral and has kept a disorderly house. Mother has had illegitimate children by white men. She has used tobacco all her life and has brought her children up to do so. She has been arrested for drunkenness and found guilty of keeping a disorderly house. One sister of patient is married, had an illegitimate child by a white man before her marriage. She drinks to excess and associates with disreputable people.

Sister No. 2 is married, had an illegitimate child before her marriage. Cannot read or write. Used to drink excessively but not for the past year because of ill health.

Sister No. 3 married a worthless white man, had an illegitimate child before her marriage by a white man. This child was taken away by the courts as neglected.

Brother No. 1 had a bad reputation and two smaller children, a boy and a girl, were taken by the State Board of Charity and are reported to be bright children.

*Environment.*—Home influences were bad physically and morally. She was allowed to attend dances and return home as late as late as three o'clock in the morning. She has had the usual diseases of childhood. Maturity was established at 13 years. Delinquencies first occurred at the age of 13. From that time on she has had illicit relations with several men and boys, drinks to excess with the family; at least once became intoxicated. Had a stillbirth at seven or eight months. Had an abortion November 16, 1915. Following this she still continued her immoral relations and on December 22, 1915, when during a family row the police came into the home, they found her in bed with a man and she was placed under the care of the M. S. P. C. C. In January, 1916, she was committed to the Industrial School for Girls at Lancaster. At Industrial School she made little progress and was considered very weak but pleasant, enjoyed reading and crocheting, took correction well. On December 26, 1919, she was placed on parole doing housework. She is giving no trouble and has had very close supervision. Her memory is slow. She cannot remember how to set the table for breakfast; has to write down everything. Of late has developed a habit of praying for her family and herself. She states that her mother knew of her immoral relations with men and that she told her how to keep out of trouble.

It is obvious that children reared under such environment must necessarily follow in the footsteps of the older members. The two younger children, however, who have been placed in a different home, are reported to be doing very well, which only goes to show what might have occurred to the other children if such a transplanting could have taken place.

The early influence which the environment makes upon the child is illustrated by the following case:

CASE No. 11199.—Mother and two sisters of patient kept an immoral house.

Patient remembers that: between five and seven she was brought up with two girls who were said to be her sisters. These girls received fellows in their rooms and while they were busy, the mother would make patient steal money from the pockets of clothing of these men whom the girls were entertaining. At about the age of seven was taken out of this environment. She has been brought up since that time in more or less luxury, even receiving music lessons and voice culture. Four years ago, or when she was 13 years old, she began stealing quite regularly. The most recent instance was in a boarding school. This girl is bright looking, attractive. She has always been excused for her stealing and has never felt any responsibility for her misdeeds and always gives the impression "someone will help me out of this." She shows much affectation and would like to study for the stage. She is

now becoming headstrong, and as she is receiving only limited supervision she is taking advantage of the opportunity to go with the boys. She is working in a shop in the city.

This case shows that early environment first made its impression which did not assert itself until five years later, while in the meantime she had a very good home in every way.

There is still the present home that is not very bad in any one thing, but where the training is at fault. Here the child soon learns that it can have its own way and little things are overlooked or laughed at as being cute. Suddenly there comes a time when things have to be viewed at a different angle and then trouble begins.

The following illustrates this kind of a case:

Father sickly all his life, died of pulmonary hemorrhage. Mother well. *Personal History.*—Girl 16, normal birth. Mother unable to care for child so sister took her.

She always had a bad temper, had to be carried about by mother while she was doing housework. Now will do anything to gain her own way. The rigid rules have recently been put on tight. All her liberties were cut off, moving pictures or dances; "constantly nagged." "I wasn't contented at all." Ran away with a man whom she met at the movies. Lived with him in room. Later found that he was married. She is now a mother, unmarried.

This case additionally shows the bad influence which is placed about young girls and boys in the movies. The problem play, which always comes to a happy ending on the screen, does not work out so pleasantly in real life, but the young girl does not find this out until it is too late.

A few of the girls are just generally bad not because of the home environment, but because of their willfulness in deliberately running into wickedness. They are the ones who are bold, saucy, seem to have very little realization of their conduct. They are usually slightly subnormal and yet not feeble-minded. They are the ones who are border line cases. They do not seem to have mentality enough to reason out things in the normal way. Environment outside the home affords attraction which gradually but surely leads them to destruction.

Case No. 11138 is of this type:

Case No. 11138.—Mother died when child was three years old. The family moved from Canada and the father, who is a well-to-do mason, had a very comfortable home where the girl had all the necessities and some

luxuries. The aunt who kept house did not get along well with the girl, who seemed to be incompatible. Patient is fond of sports, skating, golf, dancing, tennis, and when visiting in Canada entered all the winter sports in Toronto. She does not care for housework.

She went through the 8th grade, but would not finish the course.

She left home, going to work in a good home, but soon left, then coming to Boston, where she worked as a waitress in a restaurant, receiving quite large "tips."

She has always been well except for a skin disease, psoriasis.

*Disposition and Character.*—Cheerful, not sensitive, insists on having her own way, will go out nights, crawling out the window when she thought her father would object. She has no fine moral sense and her companions are of low type. She has been engaged twice but left both men for a whim. Became infatuated with a sailor (married man) with whom she lived for several weeks. She has stolen clothing and different articles.

She is only sorry that she is deprived of her liberty but is otherwise not repentant.

Mentally she is 10 8/12 years against 18.

Boys present a different problem than girls, and because of their sex they escape many times and are only brought to the dispensary when some very out of the ordinary circumstance occurs.

Of the 16 boys whom I have considered, four of them are from Lyman School. They were sent there by a judge without any mental examination having first been made. One is eight years retarded, two are five years retarded and one is four years retarded. They were recently brought to the dispensary for examination as to their mental responsibility. They were the common juvenile delinquent, and in addition are considerably below par mentally, so that school for feeble-minded might better have been considered.

Case No. 11232.—Mother died in poorhouse. Father living, is worthless, a hard drinker, dirty, coarse, and not mentally bright. He is the father of at least one illegitimate child.

*Personal History.*—Born June 2, 1907. Following mother's death was cared for by an aunt who lived in a ramshackle building; did not give ordinary care to the boy.

Because he played truant he was sent to a home and there he tried to set fire to the buildings. He was then committed to Lyman School as a stubborn child on January 26, 1917.

At the school he gets on well but when placed out in a home he is absolutely dishonest and unrulable. He has fits of violent temper and in one home threatened the lady of the house with an axe.

Mentally he is 8 10/12 years against 14 years. He says nobody understands him; that he is much imposed upon and everyone tells lies about him. Says he would like to have a good home and wishes to see his father, whom he just fairly remembers.

This sort of a case would require much time and study to adjust him to a good environment, but I believe before long we can have a series of homes where these cases can be placed and studied under the care and supervision of a trained person. Already a start is being made at the Psychopathic Institute in Cincinnati, and I trust that before long many states will be doing such for their juvenile delinquent.

## DISCUSSION.

DR. STEARNS.—I think it is very well for psychiatrists to have environment brought to their attention as a factor in conduct disorder. A few years ago we were inclined to a point of view which assumed mental disease in every case. I think Dr. Dodge has expressed my opinion of a number of years ago. Since that time, however, environment has been creeping back and we now give it quite a definite place as an etiological factor. My own work at the Massachusetts State Prison has been at the opposite end of the scale from that of the cases mentioned by Dr. Dodge, for admission to the State's Prison often means the end of a criminal career. There we frequently see cases in which cultural influences appear to be the whole story. For instance, a Southern negro transferred to our Massachusetts community is unable to conform to our social requirements and the same happens to our primitive Italian. A very large percentage of our present prison population was born in Italy, but their children do not appear. So, in general, I think that as the cat thrown out of the window lands on its feet, so the perfectly normal man exposed to any environment is able to make adjustments. It is very wholesome for us to hear of environment as well as forms of mental disease in this sort of an audience. Because it seems that many, particularly newer disease groups, represent an hypothesis formulated for the sole purpose of explaining the particular conduct with which we are dealing.

DR. SMITH.—I was much interested in hearing this paper. I desire to emphasize the relationship of abnormal mental states as an underlying factor. In the past few years I have had many cases of delinquency, not those which had gotten into the courts, but rather those from problem cases brought to a psychopathic clinic. In each case it was the abnormal behavior reactions that caused the delinquency. Abnormal mental states are the primary points of attack. In substantiation of this fact we have tried to get hold of all the children in the family where there is an abnormal child for comparison. We find the other children of normal mental makeup do not react in a similar manner. There is a great deal in environment, but

environment does not altogether control the delinquency. Another point of the paper which I wish to discuss is the relationship of the mental age. In the cases of delinquency you often find the reason for the low mental age levels. It is due to the fact that the child stays away from school or the reaction to lack of proper instruction or guidance at home as often as it is due to a congenital defect of intelligence. If you consider the environment in all its phases, the fact that the individual missed school through truancy, etc., the relationship of the lack of members of the family, the amount and type of home training, you would find that, intellectually speaking, they are above the average mental age level. This does not mean that mental deficiency is not also a potent factor. Many types are frank cases, others borderline, but far too much emphasis has been placed upon mental deficiency as a cause of delinquency. The types of tests and reactions that these individuals fail upon are those requiring judgment, ability to plan out their lives independent of supervision whether it be that of the family or society in general. I might cite a case illustrative of this point. A girl of 15 years was brought up in a family through adoption and was never required to attend school. At the age of fourteen she went to work in a factory at mechanical labor. Her mental tests gave a perfect score; in fact, the third case to attain such a score. How did she do this? It was accomplished through picking things up here and there on her own initiative, and it was only through superior intelligence that she was able to do this. Her lack of supervision and instruction, however, accounted for her behavior reactions, but it was the superior intelligence that caused her to be the social problem that she was. In closing, juvenile delinquents usually have as a background superior intelligence or abnormal mental states that are so warped that maladjustments result. Those whose mental state is of average normality under the same environmental considerations do not become delinquent.

DR. MYERSON.—I happen to be the predecessor of Dr. Dodge in his clinic and so I saw a great many of the cases that he describes. I think the average psychiatric attitude toward the delinquent is puerile. It reminds me of my six-year-old son, who said to me one day: "So-and-so is a good boy." I asked: "Why is he a good boy?" He answered: "He does good things." I questioned further: "What are good things?" Said he: "Things done by a good boy." In psychiatry we say the chronic offender is a constitutional psychopathic individual. "Why," someone queries, "do you call him a constitutional psychopathic individual?" The answer is: "Because he is a chronic offender." There does not seem to be much difference between this type of reasoning and that evidenced by my six-year-old son. What we have to deal with is a conduct disorder and we might as well call it conduct disorder or character anomaly without tacking on to it a disease label. Personally, I am of the belief that most of the delinquency is environmental rather than hereditary or congenital. Of one hundred girls whom I examined for the Massachusetts Parole Department, nearly every one of them had homes and environment that made their

delinquency seem normal. I contend that it is the environment that must first of all be examined to explain phenomena of conduct. We do not know enough about heredity to ascribe conduct disorder to it in any sweeping fashion, but we can analyze the environment, and we had better exhaust a known factor before we invoke an unknown.

The thing that has saved most of us from becoming delinquents, as I review my own life and the life of others, is that we were not found out, or else that temptation, opportunity and desire did not coincide in time. Temptation and opportunity are futile of results if there is no desire. Desire produces little if temptation and opportunity are lacking. If temptation and opportunity coincided with every criminalistic desire, that thing that all of us have, then all I can say is, God help society.

DR. CORIAT.—Dr. Dodge's paper interested me very much, and the few words I have to say will be devoted chiefly to emphatically differing from his viewpoint. My experience with juvenile delinquents and their peculiar disorders of anti-social conduct has shown that environment plays but a small part. I believe most of these cases of disorders of conduct in juvenile delinquents which lead to unusual social behavior arise from within the individual as the result of long mental conflicts. Undoubtedly, I will admit that in a certain number of cases, possibly these mental conflicts have been precipitated by environment. Of course to label these conditions as a constitutional psychopathic state means nothing; it is merely the admission of our ignorance—the pigeon-holing of something we do not understand. My experience has shown that most of these cases arise from gross mental disorders, from the psychoneuroses or through feeble-mindedness, particularly in the cases in which stealing was a prominent symptom, and when these cases are carefully examined without the necessity of going into any detailed analysis, it will be found that the large majority of all of them are of the neuroses where the stealing is merely symptomatic of inner conflicts of the patient. To say that the patient is feeble-minded and does certain things likewise explains nothing, because all of us know how full of errors are these so-called intelligence tests which are used for the detection of feeble-mindedness. I am very skeptical when a young girl of 15 years who has been stealing and it is reported that her mental age is 7.4 years, because a failure to react to the intelligence test does not always mean a mental defect; it may be due to certain emotional conflict, and even if we do admit that the person is feeble-minded, this does not explain the peculiar anti-social conduct of the individual.

DR. DODGE.—All of these cases were the total number of what we termed at the Psychopathic Hospital "delinquents," and in looking over every case I found that there was an environment that caused the delinquency. I believe that environment is almost the prime element in the development of these juvenile delinquents, and the sooner we can get some sort of systematized education for the home the sooner we will be able to relieve and alleviate this condition of delinquency that we have to-day.

# MAGNESIUM AS A SEDATIVE.*

By PAUL G. WESTON, Warren, Pa.

It was shown by Meltzer and Auer in 1905 that the primary effect of magnesium upon the nerve cells is that of paralysis without any preceding excitation. The effect seemed to be exclusively of an inhibitory character. They injected subcutaneously into rabbits varying amounts of a 25 per cent solution of magnesium sulphate. The effects depended on the size of the dose and varied from no effect to complete muscular relaxation with loss of cutaneous and corneal reflexes. Larger doses caused death by paralysis of the respiratory center. Calcium chloride even in small doses when given intravenously overcomes the inhibitory effect of the magnesium.

It would seem that here we might have a good inhibitory agent and that it might be of value in excited states. Also we know the antidote which is easily obtained and prompt in its action.

For the past few months magnesium sulphate has been used at the Warren State Hospital as a sedative. The salt was recrystallized twice and was free from calcium, sodium and potassium. It was administered hypodermatically in doses of one or two c. c. of a 25 or 50 per cent sterilized solution. There were no local effects, though one patient complained of a burning sensation at the site of injection.

In all more than 250 doses have been given to 50 patients. Half of these were agitated depressions; seven were dementia præcox cases; four were paretics, and there were one or two each of epilepsy, senility, organic dementia and hysteria. There was one actively manic case. All were noisy, talkative, very restless or resistive. In short, all were more or less agitated.

The result in nearly all cases was the same. The patient relaxed and slept from four to six hours. Some patients did not react at

* Author's abstract. Read at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31, June 1, 2, 3, 1921.

all. One woman, an agitated depression, received three doses of two c. c. of a 50 per cent solution of the salt at half hour intervals. There was no apparent effect. This was repeated the following night with the same result. One actively manic patient received one cc. of the 50 per cent solution every three hours for four doses. There was no noticeable effect. Of the total 250 doses, 30 were without effect.

The most marked effect was obtained in simple agitated depressions. There has been no opportunity to give the salt to a sufficiently large number of very active, excited patients to know whether it is of value or not.

# INDUSTRIAL PSYCHIATRY.*

By JAU DON BALL, M. D., Berkeley, California.

## Introduction.

What is industrial psychiatry? What is the outlook for industrial psychiatry? Are we to confine our activities in industrial psychiatry to mere recording of symptoms, placarding a case, or looking for true institutional cases?

The answer to the first question is not known at present; no attempt will be made to present it in form of a definition. The ultimate answer, however, will state in definite terms the problem of industrial and social unrest.

The other two questions are answered by the following discussion:

The philosophers of our profession have burned their souls out in seeking the whyfore of the mental disturbances which have not only wrecked the lives and smothered the careers of individuals, but have at times disturbed the peace of nations and unbalanced the equilibrium of the world. The result of their vision is being demonstrated in the accomplishments of especially trained men and women earnestly working in fields hitherto passed unnoticed. The facts that these workers are unearthing clearly point the future for the psychiatrist, the road along which he can be of greatest service to humanity. The state hospital service, the service in private sanitoria, the clinical experience in psychopathic hospitals and mental hygiene clinics act only as a stepping stone to prepare the student of abnormal human behavior for the higher, more practical, more glorious service of adjusting the mental ills of the nation's industrial life.

The superintendency of a state hospital, the establishment of a private sanitarium, the development of a private psychiatric prac-

* Read (by title) at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31, June 1, 2, 3, 1921.

tice were formerly the only goals to which the young men and women in our specialty could hope to reach. Perhaps a few hope to convert the legal profession. This road is beset with obstacles of legal precedent and fictitious concepts that are oftentimes sufficient to discourage the strongest. Progress is being made slowly in the medico-legal field and the situation for the sake of comparison with the industrial field may be briefly stated as follows:

The relation of mental disorder to law is a topic which is of great interest and paramount importance to specialists in mental diseases and to lawyers. From time immemorial the divergence between the legal and medical concept of insanity has been more or less constant. Little or no attention has been paid by members of the legal profession to the study and progress of medical science as it relates to mental disorder; and, on the other hand, members of the medical profession who specialize in psychiatry have stood firmly by the prevalent scientific concepts of mental disorder and in many instances fail to recognize, blinded as they often are by their scientific enthusiasm, that the legal concept is purely an effort on the part of society to segregate, at least temporarily, persons who by their abnormal behavior interfere with the rights of the majority.

Be it understood that modern legal psychiatry does not properly aim to free its objects from the enforcement of the law, but does aim properly to educate the public, and more especially the legal profession, to the necessity for permanently segregating many persons who, by reason of certain mental abnormalities and defects, are a permanent menace to the welfare of society. As it stands at present, it frequently happens that dangerous persons are discharged from custody; and many who have committed abnormal and dangerous acts and who are convicted are shortly released upon society by the parole and probation systems, only to repeat their criminal acts by reason of an unrecognized mental defect or abnormality. Unfortunately the public looks with suspicion upon expert testimony and this is undoubtedly due to indiscretion, unconscious partisan feeling, or, as occasionally happens, to deliberate misinterpretation and twisting of facts, by the medical expert backed up by the lawyer who is bent only upon freeing his client and who fails to recognize his obligation to society.

The chaotic situation may be cleared and lawyers and doctors meet on a common ground if the principles of modern psychiatry are recognized and properly applied for the benefit of society and not for the selfish aims of lawyers and doctors whose social ideal is either nil or at best at low ebb.

As it now stands, the law, through modern psychiatry, frequently turns loose upon society persons dangerous to its welfare. This weapon of modern psychiatry should be impartially utilized by society for its protection, but unfortunately, through restrictions and misinterpretations, either deliberate or unconscious, it frequently becomes a menace. Given

free rein, modern psychiatry would segregate permanently more people with criminal tendencies than legal procedure does at present. Recidivism would, in time, be reduced to a minimum.[1]

The mistakes of our specialists in the legal field should be a warning to those entering the field of industrial psychiatry. The pioneers in our work ever stand as monuments at our backs; their accomplishments are the spurs that are driving us into new fields. You have labored hard and long, but now you are coming into your own. The thinkers in industry, both industrial leaders and labor leaders, are awakening to the need for such men and women as can come only from the ranks of our specialty.

Just as the general physician and internist is applying the principles of preventive medicine for the welfare of mankind, so are we emerging from the chrysalis of the treatment of end results and are applying preventive measures which have developed within the bounds of our specialty. The extent of the application of the principles of mental hygiene (the prophylactic of psychiatry) are limitless, for we can rightly claim that every bit of abnormal human behavior comes within our jurisdiction. As aids in this wonderful work we have recourse to the observations of duly qualified psychologists, sociologists, our brother physicians working in other specialties, and the earnest, especially trained psychiatrical social workers and nurses. The outlook for industrial psychiatry may be gleaned from the following quotation from a report, of a survey recently made by the author, to the president of one of the large oil companies of the world. The survey, parts of which constitute the basis for this communication, resulted in the establishment of a special personnel department in charge of a psychiatrist.

"The mental hygiene of industry" is no longer an elusive concept. Just as the efficiency of an individual is, to a great extent, dependent upon the attention he pays to physical hygiene, so to a much greater extent is his efficiency and success dependent upon the application of the principles of mental hygiene.

The betterment of industry is recognized by all thinking persons as the "cry of the age." As a man thinks, so will he work. The "drives" behind human behavior are beginning to be understood and appreciated at their true values. The value to industry of a careful study of the stimuli at work in all cases of abnormal individual and group behavior detrimental to the interests of employer,

employees, and consequently society in general, is beyond computation.

Industry is naturally interested in production cost. The cost of production is dependent upon the "*human factor*" which raises or lowers the cost of production, according to its moods, attitudes, tastes, appetites, disposition, temperament, character, and intellect. The cost is increased when the innate tendencies or instincts of this human factor are adversely and unwisely stimulated; and the cost can only be lowered when these elements are recognized as fundamental and as needing normal stimuli, direction, and guidance.

The high cost of production in any industry is in direct ratio to the behavior of employer and employee for the particular industry, and it must be realized that not only does the organization suffer, but the employee and consequently society suffers; which in turn rolls up resentment, disgruntledness, antagonism—all adverse and destructive *sentiments* which, had the individuals constituting the organization been properly studied and directed, would have never developed, or at least would have been swamped, submerged, and repressed permanently under the enlightening influence of mental hygiene. In the place of the costly adverse sentiments above mentioned would be loyalty—constructive thinking—and co-operation, the economic trio of industry.

Industrial unrest may make itself apparent in many ways. It is frequently indexed in the turn-over problems of a plant; the waste of material and time and consequent over-cost of production, and ultimately in paralysis of industries by strikes with their attendant necessary high cost not only to the individuals but to the industries involved, and to society in general. Strikes may be avoided by agreements, but unless close study is made of underlying reasons for abnormal conduct, and proper remedies applied, the high cost of production within the particular industry, will continue and little or no interest taken in the conservation of waste (material and time) and the instinct of workmanship, so essential for personal and industrial success and progress, will remain at low ebb.

Success of industry is measured in dollars and cents; but too often the dollars and cents income is in rational excess of dollars and cents out-go in spite of itself and not because of a loyal and efficient organization.

The personnel problem resolves itself into a study of personalities which necessarily means a careful study of intellect, temperament, and character—and the relation of industrial environment to the individual taking into careful consideration national and racial peculiarities and idiosyncrasies.

Progress in the field of industrial psychiatry will be measured by the degree of protest of non-progressive, short-visioned, self-centered, intellectually circumscribed persons who " protest against a program of more expert study of anything whatever, including human personalities wherever at work." [2]

The success of industrial psychiatry is inevitable. It will not only stabilize the personnel of industries, with consequent advantages, but will strengthen confidence and develop an unshakable loyalty wherever conscientiously applied.

Essential to industry is an outlet for the emotions and feelings of the workers. This outlet point must be a person particularly adapted, with understanding and sympathy to the man who, registering his complaint, is made to feel that it has not been in vain. Thus having this point for his outlet—mental relief is obtained and greater efficiency in his work will result. Not having an outlet of the right kind, the man goes to his work mentally disturbed—lessening his efficiency, and later, after working hours, seeks an outlet with his fellow workmen who, too, have similar troubles and the result is that agitation, resentment, and disloyalty thrive.

The tendency of the employee is either up or down according to the behavior of the employer. Up—when the employer is a stimulus. An ambition is then a goal to the employee who works towards or with the company. Down—when employee, after a time, develops an antagonism to things and persons above him and works against the company—thus forcing himself down and farther away from his interests and ambitions, which in time prove a greater menace to himself than anyone else; but in the meantime, through lack of foresight and unscientific management, the company pays the bill in increased cost of production.

Thus we have a prognosis for industrial psychiatry which is believed to be very conservative.

Industrial psychiatry should not be considered a " weeding out " method, but a method of conservation; therefore it behooves the psychiatrist who would enter the industrial field to increase his

range of vision—to take a look at conditions—industrial environment, wage schedules, etc. Such things as fire hazards, health and accident hazards, ventilation, housing, job-analysis, labor turnover, and community relations and recreational facilities are mentioned not as abstract things but as concrete factors affecting the individual and conditioning his behavior.

Upon the behavior of individuals (and groups of individuals) depends the successful operation of any organization. No organization is stronger than its weakest unit. Therefore, when unhealthy, abnormal, anti-social ideas begin to group themselves about the constellation of discontent, dissatisfaction and disloyalty, the whole problem becomes one of psychiatry or mental hygiene.

It is patent to the careful observer that the psychiatrist must needs be the director of personnel departments for industries if real success is to be attained.

## Practical Application of Psychiatry to Industry.

### I. The practical application of psychiatry to industry has been definitely established.

There is no panacea for the ills that beset society. All of you are no doubt familiar with the various plans offered from time to time in the past to solve the social and industrial problems known generally by such terms as social and industrial unrest. Many solutions have been suggested to quiet the turmoil—but these plans have all been too general. Every nation has its problems, every community within each nation's bounds has its problems, every organization (industrial and otherwise) within each community has its problems, and so on until we arrive at the individual constituting a part of the organization. We have been studying groups for ages—now let us turn the spot-light of psychiatry on the individual. It is the opinion of the author that each and every industry will be able to solve its own problems only by carefully studying the individuals constituting its organization. This applies equally well to labor unions.

The most important part of an organization is the individual worker, yet he receives the least study and is considered the least in the general scheme of things. The mechanical devices and machinery of various sorts are carefully attended to, yet the man

who operates them is oftentimes overlooked. Visitors to our industries have pointed out to them this bit or that bit of wonderful mechanism, but seldom do they have their attention called to the worker, the actual producer. In fine we have been junking the finest piece of mechanism ever created—man. It is up to this venerable association to place its stamp of approval upon the psychiatry of industry and make every effort to duly impress industrial and labor leaders that there is no mystery enveloping their problems. The same instincts with their attendant emotions determine the behavior of all. Man is man the world over. He fears, becomes angry, manifests wonder, exhibits disgust, subjects himself to more dominating brothers, shows elation, and pours out tender emotion, in varying degree according to the potency of the stimuli and the strength of his resistance. He furthermore gathers together in groups for protection and takes pride in his accomplishments and seeks to provide himself with the necessities and comforts of life. He is amenable to suggestion—will do as his brothers do and responds to constructive sympathy. He loves and he hates, according to his treatment. Capital, labor, upper class, middle class, lower class, employer, worker, or whatever terms we choose to designate the various strata of life are fundamentally moved by the same innate tendencies. Whatever it is that determines the various groups we still must admit that within all we have psychopaths, psychotics, feeble-minded, epileptics, defects of character, temperamental peculiarities, individuals and groups manifesting high social ideals, differences in tastes, appetites, and interests. Psychiatrists well know that man under physical or mental stress may not respond in the manner called normal by society. The worker one day awakens to the fact that he is a worker only, and henceforth joins the hyper-sensitive multitude. The employer sleeps on oftentimes utterly oblivious to the fact that he is acting as the adverse stimulus to the particular sensitive group of workers in his employ. Through the urge of acquisition this group makes a demand. His pugnacity is aroused; he refuses or dickers, delays and evades, which in turn arouses the pugnacious instinct of the worker.

Uncontrolled and misdirected this pugnacity on both sides results in disaster, waste, and frequently frenzied destruction. The duty of the psychiatrist is plain. It is education for both groups and

not a weeding out process. If industrial leaders would overcome their fear (and fear it is) long enough to permit a rational comprehension of the situation from a psychiatric viewpoint and seek the aid of specialists in human behavior they would be astonished at the results. You are met with the statement that labor unions, labor leaders and the men would not stand for such a program. Let the first answer to that concept be noted in the following extract from a paper read before one of the strongest unions of this country by a highly intelligent labor leader, himself a truly conscientious worker:

> As there is nothing new under the sun, so is the plan as proposed by the ——— Company for the employment and management of their men not a new one; at least not in its fundamental features, which are mainly copied after the army plan.
>
> Without entering into the minute details of the problem which cannot accurately be stated now, inasmuch as they are largely experimental at this stage of development, which is always the case in the practical application of more or less new methods, it may be said, however, that first of all it means a mental as well as a physical examination of the applicant for employment. Then, it means a one-man employment system, which in turn means that the right to hire and fire will be practically taken out of the hands of the many foremen, who only too often abuse this privilege by being influenced by personal whims, caprices, and prejudices.
>
> It further provides that the man in charge of the examination and placing of the applicant keeps track of him while employed. He knows how long every man employed on the lease works at a certain job, and how he does his work, and when his turn for promotion has come. This is to eliminate the present unfair method of putting a man to work, forgetting all about him and when a more desirable place is to be filled to either look for a man outside or to favor a man who happens to hold a place in the foreman's favor, leaving the rightful and deserving candidate to work out his salvation as best he can in obscurity.
>
> Nor do the duties of this man end with the examination, employment and promotion of the individual worker—his duties embrace also the care of and control over the social, mental, physical, and sanitary conditions of the lease—in fact, everything pertaining to the welfare of the camp which is not designated by the wage memorandum as being part of the shop committee's work. A school for industrial and mechanical training may be established, wherein mechanics and mechanical drawing are to be taught for the benefit of those who are desirous of availing themselves of such an opportunity.
>
> The object of this change in the company's policy is not an elimination or "weeding out" process as might be suspected on first thought, but it means improvement and promotion from within as against the former

haphazard way of hit-and-miss—hit the deserving ones in the weeding out process and miss them in the promotion process.

It is not to be considered a philanthropic move on the part of the company but an advanced business method, which must pay dividends to both parties if carried to a successful solution. To the employer it must result in a more competent working force with less waste and labor turnover, while to the employee it must bring a larger degree of contentment, satisfaction and interest in the work because of the assurance of impartial fairness and appreciation of his services by the recognition of his merits in the process of promotion.

To accomplish these desirable and laudable results a whole-hearted co-operation of both sides becomes an absolute necessity. On these conditions success is inevitable, while on the other hand failure is equally certain if interest on either side be lacking.

The reading of this paper was followed by considerable suspicion, protest and accusations against the reader. He firmly stood his ground and was, at a subsequent meeting, upheld by the chief adviser of the union (a man known for his intelligence and force, but by industrial leaders classed as a dangerous agitator) whose social ideal is nevertheless high and whose sole object is the betterment of conditions for the worker from whom in turn, for better wages and improved working conditions, he demands the amount of efficiency called for by his pay and workmanship instinct. The result of this educational program by intelligent labor leaders who caught the idea advanced by the psychiatrist that the study of the individual meant a brighter, more normal future for the worker, was absolutely astonishing. A spirit of co-operation which extends from management to lowest paid roustabout has been developed. The key has been in frankness, explanation of methods, the elimination of mystery, and the placing of the "cards on the table." The further value of this stimulus is evidenced in the following clipping taken from the official paper of the union. This article was on the front page in the center of other articles which were definitely belligerent to other industrial organizations:

If what Brothers X and Y say is true, and we have no reason to doubt it, the efficiency system initiated on the ——— properties of the ——— Company by Doctor ——— is one of which would bear looking into by other oil operators of the State ———.

Efficiency systems, the sole purpose of which is to extract the last ounce of energy from those coming under their operation without regard to their consequent physical and mental deterioration are too numerous, and it is

refreshing to hear of one, the chief essential of which is the practical and scientific conservation of the bodily and mental vigor of its subjects.

There has always been a terrible wastage of man power in industry, due in great part to the absence of the application of scientific principles of the question of the man at the job. The system inaugurated by the ——— Company would seem to be a long step toward remedying this condition.[3]

To demonstrate the difficulties encountered by a psychiatrist in industry the following important incident is given: A committee of workers, constituting a mixed shop committee and welfare committee, waited on the psychiatrist in charge of the personnel department—stating that one of the employees had been discharged for suspected bootlegging, that from the facts in their possession he was not guilty and had not been arrested. He had sought employment with neighboring companies, but had been unable to secure work. A black-list was suspected and they proved that a private detective agency had so listed this worker. An injustice had been done, the psychiatrist was under fire, for he was suspected of conducting an employment bureau along old lines. The situation demanded quick action. The friends of yesterday were about to discredit the new plan and revoke their sanction of a psychiatrical personnel department. The situation was the result of an old policy and naturally not sanctioned by the psychiatrist or his executive sponsor. The "atmosphere" cleared with the establishment of the truth of the contention of the committee and the immediate restoration to work of the man who had been discharged. During the interview with the committee it became necessary to define the policy of the personnel department. This policy is definite and may serve as a suggestion for others entering the field of industrial psychiatry:

Absolutely all cases, whether employment, discharge, transfer, promotion, or grievance, will be dealt with individually. The judgment or opinion of no one man will be taken as to whether or not a worker applying for position is desirable or undesirable. This department, under my direction, will ascertain all the facts in any particular case, whether worker seeking employment or worker resisting termination or worker presenting a grievance, and render a decision only upon facts as actually ascertained, thereby eliminating prejudice, favoritism, petty jealousies, and judgment of persons unqualified to scientifically and justly prognosticate the behavior of others.

Furthermore, this department is undertaking a task for which it alone is responsible and that it intends to act according to the principles as just outlined. The problems which may confront it are to be solved according to

the constellation of facts surrounding each case and then only after a just, unbiased, rational, and ethical observation of all factors entering into the particular problem. Each and every case then will be treated individually.

This department definitely approves of law and order. Serious offenses against society, affecting this community in particular, should in all cases be dealt with through normal social channels by properly qualified civil authorities, and it is in no wise the function of this department to interfere or place obstacles in the pathway of the proper carrying out of the laws of society.

Many cases, however (speaking generally), of petty delinquency can be saved if properly handled, and should such problems ever face this department, it assures you that you will have its full co-operation in studying the individual with the object of salvaging him to society and to himself, should that be the desire of the injured person making the complaint, or should it appear that the facts so warrant.

The author's ideas of the psychology and "psychiatry" of a "black-list" situation was incorporated in a report, as follows:

This case, serious as it is, fully and clearly emphasizes the great need for a personnel department for this company, not only in this field, but to guide and direct the "behavior" of its employees throughout.

A little education and training in study of human behavior would save just such situations from choking the sentiment of loyalty, and would prevent them from developing. Briefly, then, this case demonstrates the adverse stimulation of normal instincts with a resultant undesirable and destructive attitude on the part of the worker, interfering with his interest in his work, his loyalty to his employer, and if continued and allowed to develop and grow, would react in a damaging manner to all concerned.

The reaction of the worker to this adverse stimulation in turn acts as an adverse stimulus to employer—and unless counter stimuli of a conciliatory nature are applied, a truly dangerous, vicious circle will be established.

The specific analysis is:

Adverse stimuli ..... { "Black-list" / Private detective agency. } Acting on certain instincts or innate tendencies.

Instincts or innate tendencies affected { Pugnacity (anger) plus Self-assertion (elation) } Developed the adverse sentiment

= { Resentment against the source of stimuli (the company)

which if prolonged grows into vengeance against the company.

For the individual of the private detective agency the same thing applies, but also the following takes place:

Instinct affected ..... { Repulsion (disgust) plus Self-assertion (elation) } Develops contempt, especially for private detective.

Furthermore, flight, with its associated emotion of fear, also enters the heart of the worker and we also have repulsion (disgust) coupled with it to form the complex destructive sentiment or emotion called loathing.

So—*then* this apparently trivial incident has aroused:

1st. Resentment (against the company with a possibility of vengeance if continued).

2d. Contempt for individuals.

3d. Loathing for individuals.

All the result of the combination of flight with its associated emotion, fear; pugnacity, with its associated emotion, anger; self-assertion, with its associated emotion, elation; repulsion, with its associated emotion, disgust.*

* There was no black-list except in so far as the detective agency notified other companies who could use their own judgment. Nevertheless, the petty activities of such agencies led to the rapid upheaval of mountains of discontent and antagonism. The detective agency ceased activities on direct orders from the management upon advice of psychiatrist. It had overstepped its bounds and the special activities of which it was accused were definitely not sanctioned by the company.

The above incidents demonstrate how it is possible to secure co-operation by explanation of methods and frank discussion of policies; and also it is made plain that any hedging about with mystery, extreme reticence, and general signs of distrust, will immediately create an atmosphere of distrust and antagonism.

Get rid of the element of fear and let the psychiatrist understand from the beginning that he must be as firm in his convictions regarding situations involving human behavior as the fictitious corporation is in building business. There is no half-way station in industrial psychiatry. The subtle agencies at work against you will be legion—but success will be attained if we keep our "backbone" in good workable condition. Always bear in mind the element of *fear* when dealing with both worker and employer. Be frank with both; point out the needs of the organization which you are attempting to advise. Frequently an employer will be found who will expect you to give the workers in his employ a dose of mental hygiene that will eliminate all of the problems of his organization.

He may be at fault and not the workers; so do not forget the management and chief executives in your enthusiasm. Look them over—know them well. One very important point must be made here, and that is that disloyalty, lack of co-operation, and destructive thinking is *not always* the direct result of abnormal factors in the

employee, but oftentimes is the immediate result of abnormal make-up and abnormal behavior of dominant persons in the management from the highest to the lowest. True it is that frequently an agitator, Bolshevik, I. W. W. or whatever you wish to call him, will, by sheer weight of personality and special leadership qualities, cause disturbance among suggestible employees. Such persons are usually paranoidal and their anti-social ideas have usually been stimulated wherever they have been employed by dominant or pugnacious or psychopathic superiors.

The need for special study of industry from a psychiatrical viewpoint has been demonstrated. Note that anywhere along the line a person in authority, manifesting abnormal conduct, may cause trouble in the ranks of industry. This trouble may manifest itself in open action such as *strikes,* or may be subtly present in such individual and mass destructive sentiments as disloyalty and lack of co-operation. Bear in mind that all human behavior depends upon the stimulation of innate tendencies by environmental factors which may be abnormal behavior in others. It behooves industry then to establish as its most important department a bureau whose business it shall be to see that the stimuli applied to its executives and subordinates is such as will cause normal reactions and consequently loyalty and co-operation.

### 2. ORGANIZATION AND FUNCTION OF A PERSONNEL DEPARTMENT FROM A PSYCHIATRICAL VIEWPOINT.

I. *Personnel.*—(a) Psychiatrist.† (b) Neurologist. (c) Psychologist. (d) Physician. (e) Psychiatrical social worker. (f) Special stenographer (medical). (g) Engineer. (h) Employment manager.

II. *Function.*—The function of such a department should be specifically defined and should deal with all factors affecting the behavior of employer and employee, it being understood, however, that the psychiatrist is not to supplant the management, boards of directors, engineering force, or labor leaders. His function being

† The psychiatrist should be the director and to him should be brought all facts regarding particular situations and cases. It is his duty to co-ordinate them after conferences and to make final decisions. In small organizations the psychiatrist would have to act as neurologist and oftentimes make his own physical examinations.

to collect the facts affecting the human element and which condition human behavior. His decisions may be side-tracked, but he goes on record and subsequent events will prove the correctness of his conclusions in the majority of situations and cases.

III. *Equipment.*—Special office building of special design, including reception rooms, examination rooms, consultation rooms, psychological laboratory, industrial research laboratory (proper equipment); record blanks and folders, record files, psychiatrical and psychological apparatus and necessary blanks. Desks, chairs, examination table, necessary stationery, and office requirements.‡

The viewpoint of the psychiatrist is necessary in all of the following: I. Industrial and labor audit. II. Industrial research. III. Planning. IV. Community relations. V. Force maintenance. VI. Morale. VII. Mental hygiene programs. VIII. Employing: (1) Sources of labor supply; (2) selection of interviewers; (3) group and individual test (psychiatrical, psychological); (4) physical examinations; (5) trade tests; (6) work and job analysis; (7) selection of worker; (8) studies in terminations; (9) distribution of labor. IX. Education. X. Safety. XI. Group and individual relations. XII. Service (welfare). XIII. Grievances and complaints. Study of individual cases. Recognition and classification of types and conditions. Determining, if possible the predominating and contributing causes in any individual or group cases of disgruntledness and dissatisfaction. Determination of responsibility of individuals from a purely medico-psychological standpoint. Determination of prognosis; advice regarding treatment and placement.

One of the most important functions of the psychiatrist is to select employees, from executive to roustabouts. It is necessary for him to have in mind the physical, nervous, and mental qualities essential for each position. Rather I am inclined to the belief that the training of executives in psychiatrical personnel work should be the first duties of an industrial psychiatrist. The following is an outline of the qualifications desirable for an executive to possess:

‡ Surely a psychiatrist knows how to adapt himself—so that if he is refused most of the above personnel and equipment he will get along with a good clerk and his own efforts until he is able to demonstrate his value, which he will do ultimately.

The nature of the work is executive and administrative, the requirements of which, if conscientious work is done, are very exacting and often include extraordinary accident and health hazards.

Conditions affecting the motor, sensory, and emotional reactions of the executive are such as would require at all times normal adjustments to most trying physical, nervous, and mental situations.

Mental characteristics for the field superintendent's work are: Above average education, high grade of intelligence, and especially does the job require: Attention, continuity of effort, planning ability, analytical power, accuracy above the average degree. Ability to observe and remedy defects in the organization; ability to recognize the relationship of the various departments and to properly interpret their importance to the entire organization; ability to discriminate carefully and justly; above average powers of observation and concentration and good memory. The output of energy in *work* and *play* must be noted in being active, pushing (quiet and forceful expression of these); habits of activity to show system, orderliness, punctuality, definiteness of purpose, precision, consistency, ability to shoulder responsibilities for his acts and not shift to subordinates, practical viewpoint; high moral standards, truthfulness, honesty, conscientiousness, with a great repulsion against shirking; a general cast of mood showing stability manifested in cheerfulness, "conservative" optimism, and rational sense of humor; also absence of abnormal conceit; ability to see mistakes. His attitude towards others should be sympathetic, kind-hearted, generous; his reactions to attitude of others should be frank, reticent if necessary, open make-up; self-assertion inasmuch as it requires ability to "shape things," manage difficulties well and ability to lead; adaptability enabling him to get along with other people and hold their confidence and respect; sociability and ability to make friends and readily get acquainted; a normal position towards reality; manifestation of normal interest in society, or in other words, his social ideal as well as his personal ideal should be well developed, and a great sense of satisfaction should be obtained from what he does.

The mental qualifications of the executive should conform in general to the above, but in addition his personality, in lay terms, should be "pleasing." In a more technical or scientific conception

the personality of the executive should be manifested in a high grade of intellect; a desirable temperament, and an excellent character (manifested in): (1) Normal control over, and rational direction of, innate tendencies or instincts; (2) satisfactory dispositions; (3) desirable habits; (4) reasonable *tastes;* (5) normal personal ideal; (6) highly developed social ideal; (7) above all an ability to back up his convictions with what is known as strength of character.

The relation of the position to the organization is most important, for upon the type of man selected depends the loyalty and co-operation of all workers in the organization.

Supplementing the foregoing the mental or personality qualifications could include such traits as: Courage, organizing ability, creative sober imagination (one might even say conservative instantaneous imagination if such a quality exists); also desirable are idealistic qualities of a practical workable trend; also essential is " the subtle efficiency of tact " manifested principally in courtesy.

The filling of such a position as above described is an " Art." " No concise definition can fully describe an art, but the relations between employers and men form without question the most important part of this 'art'" of management.

### 3. COPIES OF RECORDS AND CASES TAKEN FROM SUCH A PERSONNEL DEPARTMENT IN ACTIVE OPERATION.

The following cases will demonstrate some of the work that could be done by a psychiatrical personnel department. Cases are divided into:

I. Cases demonstrating standard methods of recording.

II. Cases demonstrating methods used.

III. Specimens of job analyses made in co-operation with the engineer. These job analyses demonstrate what should be done by psychiatrist in industrial field. These analyses are also only preliminary, but will serve as basis for future more intensive study.

IV. Studies in causes of turnover.

#### *I. Cases Showing Methods of Recording.*

The scoring method is based upon the plan used in the United States Army for rating officers and is therefore a modification of

W. D. Scott's plan which featured a man-to-man comparison. It is explained as follows: Assuming that an arbitrary "normal" or "average" criterion is desirable, then the following qualifications as a tentative basis to rate from, either up or down, as the requirements of the *job* may indicate:

(1) At least average intelligence (to be determined by one or more of the standard tests for intelligence). (2) Good physical condition. (3) Good nervous condition (determined by neurological examination). (4) Good mental condition (determined by psychiatrical examination). (5) Personality characteristics of special kind (aside from normal intelligence) as: (a) Normal control and activity of innate tendencies or instincts (according to McDougall's outline),[5] as well as bodily activity; (b) satisfactory dispositions; (c) good and desirable habits; (d) recognized normal personal ideals; (e) recognized normal social ideals; (f) normal tastes; (g) strength of character; (h) satisfactory temperament. (6) Speed. (7) Accuracy. (8) Good reasoning ability. (9) Good auditory memory. (10) Good visual memory.

The score for each individual is based upon the ten qualifications[6] enumerated above, but classed under five heads or topics which also serve for scoring other traits.

The score for each person is the total number of points obtained. In no case can this score be more than 100. It must be borne in mind that this is not a percentage score; that is, it is not on a percentage basis, but each grade of a quality or group of qualities has a special value which has been arbitrarily determined.

The values for each qualification or group of qualifications is indicated numerically after each one. The following list of qualities has been decided upon as a basis for scoring:

A. *Physical.*—(1) Physique. (2) Neatness. (3) Voice. (4) Endurance.

All gauged by physical examination and observation.

B. *Nervous.*—(1) Motor reactions. (2) Sensory reactions. (3) Special senses.

All gauged by neurological examination.

C. *Mental.*—(1) Ideation. (2) Judgment. (3) Reasoning. (4) Memory (auditory and visual).

All gauged by psychiatrical and psychological examinations.

D. *Personality.*—(1) Innate tendencies. (2) Dispositions. (3) Habits. (4) Temperament. (5) Personal ideals. (6) Social ideals. (7) Intellect.

All gauged by interviews, histories, observations, and psychiatrical examinations.

The values or rating was in each case as follows: Superior, 15; above average, 12; average, 9; below average, 6, inferior, 3.

E. *General values.*—(1) Intellect. (2) Learning ability. (3) Reporting ability. (4) Memory (auditory and visual). (5) Speed. (6) Accuracy. (7) Leadership.

All gauged by résumé and judgment of recorder after studying all facts.

The rating upon (E) was as follows: Superior, 40; above average, 32; average, 24; below average, 16; inferior, 8.

You will note that each qualification used for scoring has also a *descriptive* value and that the numerical value corresponds to the descriptive value: As superior, above average, average, below average, inferior, with the values 15, 12, 9, 6, 3, respectively, for each of the qualifications except *E*, which has a higher numerical value as indicated above.

The scheme for rating and numerical valuation is similar to the rating scale of the army, and the above idea is derived from it, but the values are arrived at by actual examinations and not by a man-to-man comparison, which latter method is used in the army.

The personality chart is explained as follows: The Roman numerals indicate: I. Very superior. II. Superior. III. Above average. IV. Average. V. Below average. VI. Inferior. VII. Very inferior.

The top row of letters indicate: A. Education. B. Intelligence. C. Physical. D. Nervous. E. Mental. F. Social. G. Auditory memory. H. Visual memory. I. Speed. J. Accuracy. K. Attention. L. Personality. M. Disposition. N. Temperament. O. Opinion. P. Special abilities: (1) Learning; (2) reporting; (3) planning; (4) follow directions; (5) expression or teaching.

Alpha army test was used as a group test. The Stearns and Thorndike tests were also used.

CASE I.—Male. Age: 27 years 11 months. Occupation: Clerical. Education: Eighth grade. Intelligence: Alpha test, 82C. High average.

Follows directions well. Slow decisions. Very poorly adaptable. Psychopath. Unstable.

SCORE.

| | |
|---|---|
| 1. Physical | 9 |
| 2. Nervous | 6 |
| 3. Mental | 6 |
| 4. Personality | 6 |
| 5. General Values | 8 |
| Total | 35 |

*Recommendations.*—Mental hygiene. Study. Direct. Good man if encouraged.

CASE II.—Male. Age: 40 years 11 months. Occupation: Clerical. Education: Ninth grade. Intelligence: Alpha test, 74C. Average.

Very slow. Poorly adaptable. Above average arithmetical reasoning. Judgments slow and careful. Erratic—liable to permit anxiety to interfere with work. Physically ill. Blood-pressure 190 systolic.

SCORE.

| | |
|---|---|
| 1. Physical | 3 |
| 2. Nervous | 3 |
| 3. Mental | 5 |
| 4. Personality | 5 |
| 5. General Values | 8 |
| Total | 24 |

*Recommendations.*—Needs medical treatment. Mental hygiene.

CASE III.—Male. Age: 22 years 5 months. Occupation: Clerical. Education: Eighth grade. Intelligence: Alpha test, 82C. High average.

Follows directions carefully. Slow. Careful, good arithmetical reasoning. Poor adaptability. Epileptic. Depressive. Irritable at times. Fatigues easily.

SCORE.

| | |
|---|---|
| 1. Physical | 6 |
| 2. Nervous | 3 |
| 3. Mental | 5 |
| 4. Personality | 5 |
| 5. General Values | 8 |
| Total | 27 |

*Recommendations.*—Medical treatment. No responsible position. Dangerous to self and others. Advise.

CASE IV.—Female. Age: 32 years. Occupation: Clerical. Education: First year high school. Intelligence: Alpha test, 108B, superior.

Good auditory memory; good arithmetical reasoning; slow to make decisions, but careful and is quite sure before deciding; above average mathematical capacity; very slow to adapt to new situations and at first would be inaccurate, but after "learning" would be good. Has many headaches, dizzy spells and faints; suspicious; slightly negative; slight exophthalmos.

| | SCORE. |
|---|---|
| 1. Physical | 5 |
| 2. Nervous | 5 |
| 3. Mental | 9 |
| 4. Personality | 9 |
| 5. General Values | 9 |
| Total | 37 |

*Recommendations.*—Needs physical hygiene. Guidance. Good worker. Fainting spells should be inquired into. Study.

CASE V.—Male. Age: 46 years. Occupation: Clerical. Education: High school. Intelligence: Alpha test, 158A. Very superior.

Poor auditory memory; mathematical; good arithmetical reasoning; quick decisions; good common sense; superior language ability; superior mathematical capacity; rapidly adaptable, but would be more or less inaccurate and liable to form conclusions too quickly, and inaccurate at times. Poor physical condition; nervous breakdown. Blood pressure 182 systolic—dyastolic 110. Pulse 96. Thyroid enlarged. Unstable.

| | SCORE. |
|---|---|
| 1. Physical | 5 |
| 2. Nervous | 5 |
| 3. Mental | 6 |
| 4. Personality | 6 |
| 5. General Values | 9 |
| Total | 31 |

*Recommendations.*—Needs treatment. Mental hygiene. With care would be good.

NOTE.—Much better after treatment. Is making good in position.

CASE VI.—Female. Age: 30 years 4 months. Occupation: Stenographer and typist. Education: High school. Intelligence: Alpha test, 107B. Superior.

Good auditory memory; above average arithmetical reasoning and above average mathematical capacity; good common sense; not as accurate in

decisions as desirable; some mannerisms; nervous (sciatica); not rapidly adaptable; credulous and inclined to be very suggestible. Physical condition below average. Nervous breakdown. Manic-depressive type. Blood pressure 118 systolic.

SCORE.

| | |
|---|---|
| 1. Physical | 5 |
| 2. Nervous | 5 |
| 3. Mental | 6 |
| 4. Personality | 9 |
| 5. General Values | 9 |
| Total | 34 |

*Recommendations.*—Needs treatment. Could not advance to responsible position. Not adaptable. Unstable.

CASE VII.—Female. Age: 28 years. Occupation: Filing clerk (five years) with this company. Education: High school—2 years. Intelligence: Alpha test, 156A. Very superior.

Very superior auditory and visual memory. Rapid—accurate; careful and accurate decisions; very superior mathematical capacity; very adaptable with some jumping at conclusions; not a wide range of information and not suggestible. Physical condition and nervous condition below average. Low blood pressure 112 systolic—92 dyastolic. Pulse 84. Arhythmia. Psychasthenia.

SCORE.

| | |
|---|---|
| 1. Physical | 5 |
| 2. Nervous | 6 |
| 3. Mental | 9 |
| 4. Personality | 9 |
| 5. General Values | 12 |
| Total | 41 |

*Recommendations.*—Needs treatment. Encouragement and physical and mental hygiene. Should be advanced.

NOTE.—This clerk was kept in position of filing clerk for five years. She was very desirable in this position because of her accuracy and speed. After examination she is being advanced and is making good although she lacks the trait of initiative and is not ambitious.

CASE IX.—Male. Age: 22 years 6 months. Occupation: Clerical. Education: Second year high school. Intelligence: Alpha test, 115B. Superior.

Many nervous symptoms. Nervous breakdown. In this country for health. Good auditory and visual memory; superior mathematical reasoning; supe-

rior mathematical capacity; slowly adaptable, but suspicious and has a lack of sense of responsibility which makes him untrustworthy.

| | SCORE. |
|---|---|
| 1. Physical | 6 |
| 2. Nervous | 6 |
| 3. Mental | 9 |
| 4. Personality | 6 |
| 5. General Values | 9 |
| Total | 36 |

*Recommendations.*—Does not intend to remain in United States. Such employees are bad risk. Untrustworthy. Unreliable.

NOTE.—Has unusually good musical ability.

CASE X.—Male. Age: 29 years 11 months. Occupation: Clerk. Education: Sixth grade. Intelligence: Alpha test, 93C. High average.

Many nervous symptoms. Follows directions fairly well; good arithmetical reasoning; rapid in decisions but a little careless. Tendency to question others' statements. Gossipy. Very poor adaptable. Visual and auditory memory fair. Somewhat suspicious.

| | SCORE. |
|---|---|
| 1. Physical | 9 |
| 2. Nervous | 6 |
| 3. Mental | 6 |
| 4. Personality | 9 |
| 5. General Values | 9 |
| Total | 39 |

*Recommendations.*—Fair average office man. Would be unwise to give responsibility.

CASE XI.—Male. Age: 32 years 5 months. Occupation: Clerk. Education: High school. Intelligence: Alpha test, 106B. Superior.

Good auditory memory; superior arithmetical reasoning; above average common sense decisions; slow to comprehend; good mathematical capacity; can interpret the concept of easily recognizable parts to a given whole readily; very slowly and inaccurately adaptable to new situations; very suggestible; willing; anxious to please; steady; trustworthy; reliable. Physically not well. High blood pressure. Nephritis. Range of information superior. Self-abasement predominates and is a factor in his decision in crisis which may be corrected by mental hygiene.

| | SCORE. |
|---|---|
| 1. Physical | 4 |
| 2. Nervous | 7 |
| 3. Mental | 9 |
| 4. Personality | 9 |
| 5. General Values | 12 |
| Total | 41 |

CASE XII.—Male. Age: 30 years 8 months. Occupation: Clerk. Education: First year high school. Intelligence: Alpha test, 165A. Very superior. Thorndike test, 96.3 per cent.

Very superior university intelligence. Superior auditory and visual memory; very superior mathematical capacity and arithmetical reasoning; decisions are slow but good; rapidly and accurately adaptable to new situations. Well liked; slow; depressive; diligent; stable; secretly ambitious but tied down by burden of family responsibilities. Through nervous condition has become inert, disgruntled, lost hope. Manic-depressive.

| | SCORE. |
|---|---|
| 1. Physical | 6 |
| 2. Nervous | 4 |
| 3. Mental | 4 |
| 4. Personality | 12 |
| 5. General Values | 12 |
| Total | 38 |

*Recommendations.*—Encourage. Study. Utilize abilities. A very valuable asset. With proper placement would do wonders for this company. Needs rest—change. Very valuable man in advisory position with clerical force in city office on account of his familiarity with details of camp. Should be encouraged. Mental hygiene.

CASE XIII.—Male. Age: 35 years 6 months. Occupation: Clerical. Education: High school. Intelligence: Alpha test, 140A. Very superior. Thorndike test, 83 per cent.

Very nervous. Willing up to a certain point, especially if something new presents itself. Interest soon wanes, however, and a general state of indifference comes to the surface. Has great tendency to be hypercritical, and is a "gossip." By reason of these traits, he becomes an "unconscious" agitator. He is industrious, spasmodically enthusiastic, accurate, has analytical power, facility in learning. His talents are wasted and his intelligence is not being properly utilized. Has too much time to discuss adverse conditions.

SCORE.

| | |
|---|---|
| 1. Physical | 5 |
| 2. Nervous | 4 |
| 3. Mental | 9 |
| 4. Personality | 9 |
| 5. General Values | 12 |
| Total | 39 |

Cases showing standard methods of recording are as follows:

CASE A.—Male. Age: 38 years. Occupation: Executive. Former occupation: From roustabout, through all sequences of operation, up to and including general superintendent. Education: University. Intelligence: Alpha test, 172A. Very superior.

(a) Auditory memory good. Ability to follow directions superior.

(b) Arithmetical reasoning above average.

(c) Judgment and common sense very superior. Selective decisions made after careful consideration of all facts available, consequently may be apparently slow to arrive at conclusions, but as a result great accuracy is manifest.

(d) Knowledge of language is very superior.

(e) Ability to recognize easily recognizable parts to a given whole and to interpret the concept is very superior.

(f) Mathematical capacity is average.

(g) Ability to rapidly and accurately adapt to new situations and to resist suggestion is very superior.

(h) General intelligence is also indicated by range of interest and ability to resist suggestion in this test.

SCORE.

| | |
|---|---|
| 1. Physical | 9 |
| 2. Nervous | 12 |
| 3. Mental | 12 |
| 4. Personality | 15 |
| 5. General Values | 40 |
| Total | 88 |

RATING OF SPECIAL TRAITS.

Dominant (very desirable traits): Alert, punctual, loyal, willing, veracious, discreet, tactful, neat, diligent, respected, temperate, dependable, considerate, responsibility for own acts, persistence, self-reliance, good bearing, initiative, accuracy, foresight, decisive, esprit, presence of mind, judgment of men, administrative skill, organizing ability, analytical power, co-operative spirit, facility in learning, sense of humor, ability to get results.

Satisfactory: Teaching capacity, dexterity, good voice, industrious, enthusiastic, energetic.

Unsatisfactory: Endurance, health.

CASE B.—Male. Age: 26 years. Occupation: Bookkeeper. Formerly musician. Education: Grammar school. Intelligence: Alpha test, 76C. Average.

(a) Auditory memory to follow directions in executing fairly complicated orders poor.

(b) Arithmetical reasoning fair average.

(c) Ability to make proper decision requiring exercise of good judgment and common sense poor. Confusion often results when a decision must be made hurriedly.

(d) Knowledge of language limited. Became confused on this test.

(e) Ability to readily recognize easily recognizable parts to a given whole and to interpret the concept is poor.

(f) Mathematical capacity fair average.

(g) Ability to rapidly and accurately adapt to new situations very poor.

(h) Range of information poor.

SCORE.

| | |
|---|---|
| 1. Physical | 6 |
| 2. Nervous | 6 |
| 3. Mental | 3 |
| 4. Personality | 3 |
| 5. General Values | 16 |
| Total | 34 |

RATING OF SPECIAL TRAITS.

Dominant (very desirable traits): Musical.

Satisfactory: Punctual, loyal, diligent, temperate, willing, veracious, neat, energetic, industrious, responsibility for own acts, good bearing.

Unsatisfactory (he does not possess the following traits): Alert, discreet, tactful, respected, considerate, enthusiastic, persistence, self-reliance, initiative, dexterity, accuracy, endurance, foresight, decisive, health, esprit, presence of mind, judgment of men, administrative skill, organizing ability, teaching capacity, analytical power, co-operative spirit.

Special Abilities: Musical. Above average auditory memory for digits.

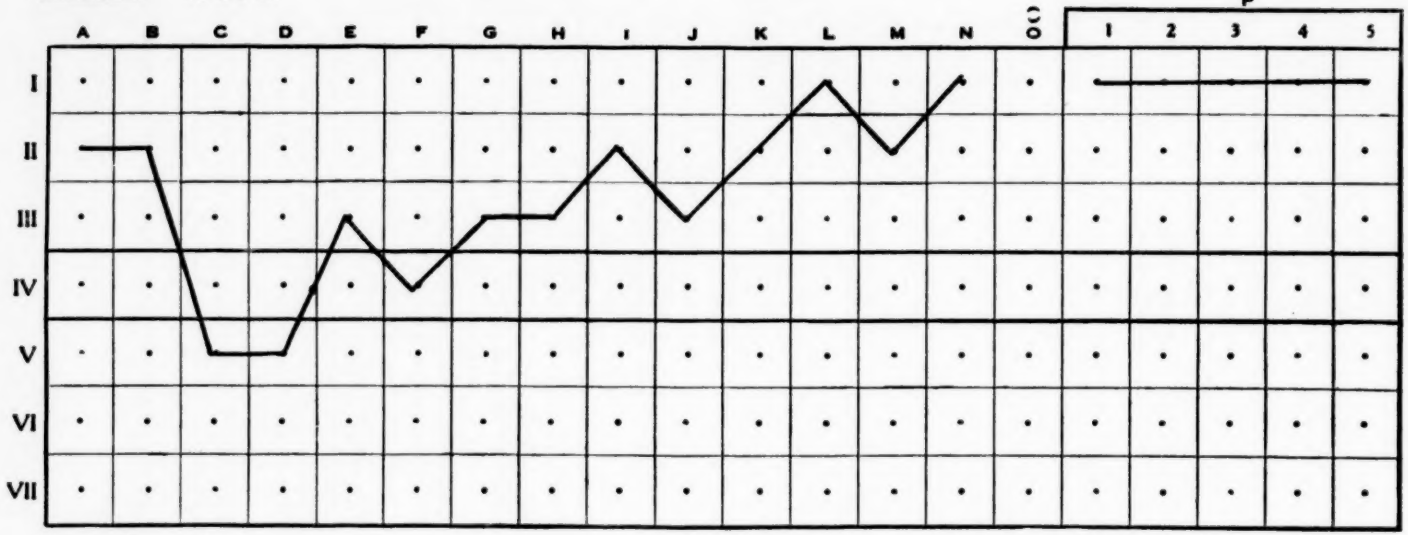
Definitely a constitutional psychopathic inferior. Paranoid type with manic-depressive symptoms. Possibly epileptic, nocturnal attacks with frequent "blank" spells. Shut-in personality. World has not given him a "square deal." Misinterprets words and acts of others always to their detriment.

Physically, nervously, and mentally ill. Dangerous, morose, moody, suspicious type. Irritable, easily enangered, unfriendly, secretly, and at times openly, egoistical.

*Recommendations.*—Unreliable. Dangerous to others. Needs treatment, especially mental hygiene.

## INDIVIDUAL VOCATIONAL GUIDANCE CHART.

No. *A.* Sex. *Male.* Age. *38.* Wage..... M. S. W. D. *Married.* Occupation. *Executive.*
Organization. *X.*
Plant. *Y.*
Department. *Z.*
Examiner. *J. D. B.*




Personality. *A.*
Character. .....
Habits. .....
Traits { Desirable. ×××.
Undesirable.
References. .....
Labor { Especially Skilled. ×.
Skilled.
Experienced.
Unskilled.

Recommendations:

Employed as *Executive.*

INDIVIDUAL VOCATIONAL GUIDANCE CHART.

Labor { Experienced. / Unskilled.

Employed as *Executive.*

INDIVIDUAL VOCATIONAL GUIDANCE CHART.

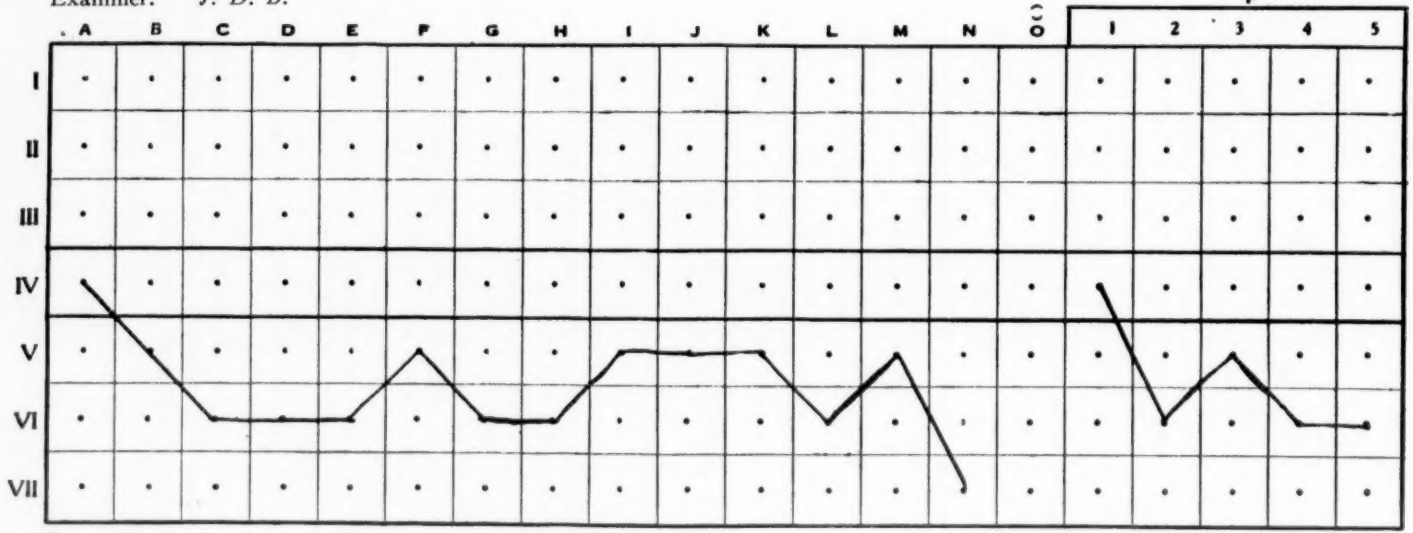
No. *B.* Sex. *Male.* Age. *26.* Wage..... M. S. W. D. *Single.* Occupation. *Bookkeeper.*

Organization. *X.*

Plant. *Y.*

Department. *Z.*

Examiner. *J. D. B.*




Personality. *D.*

Character. .....

Habits. .....

Traits { Desirable. ×. / Undesirable. ×××.

References. .....

Labor { Especially Skilled. / Skilled. / Experienced. ×. / Unskilled.

Employed as.....

Recommendations:

*See special report.*

## *II. Descriptive Methods Used.*

CASE I.—*A*, a man of 76 years of age, acting as caretaker of drinking water plant, has many flights of ideas, lives in past, is very industrious (busy "fixing up" his environment). He is forgetful, dirty (personal); and inasmuch as he does considerable gardening and handles fertilizer and manure and also at frequent intervals leaves his gardening, ascends to top of storage tanks for drinking water—picks up a long wooden gauge in unclean hands, pokes his head in tank and measures the depth of water in tank with gauge, makes one think of possibility of serious contamination of drinking water supply as water is not open to sunlight after entering tanks. This man is in a very responsible position—is senile and is deteriorating. He is recognized as peculiar, queer, eccentric—has the usual defects in orientation, and his concentration and idea processes are defective. His interests are self-centered and narrowed, often irritable; is suspicious, forgetful of recent events. He is well liked and is not at all obnoxious, but on account of deterioration should not be given the responsibility of taking care of the drinking water of a community of this size. The dangers of contamination are too great. Relieved of position and given simple job not involving responsibility.

CASE II.—*B*, a man, aged 65 years, occupation a "pumper," necessary to oil machinery and be around moving parts. About a year ago caught his hand in a moving part of an engine. Immediately the arm was lacerated and paralyzed. Facts seem to be that he stumbled (supposedly on a piece of pipe) and put his hand out to support himself. The result is a permanent paretic condition of left arm and hand, especially for picking up fine or small objects. Compensation is being paid; working at same job at present. Examination showed: Dizziness—inability to think quickly; cannot concentrate or fix attention very long; poor emotional control and a little confusion when asked to execute a number of movements in rapid succession. Atrophy of muscles of left hand. Definite evidence of cerebral arteriosclerosis associated with senility. Conclusions: Probably correct that this man suffered slight "stroke," became dizzy—fell on machinery, lacerated hand. Later saw piece of pipe on floor and as is usual in these cases shifted responsibility to an inanimate object, when in reality the stumbling and subsequent accident was probably due to his nervous and mental condition. He is on job again and some day will be more seriously injured and the company receive blame and the state pay compensation.

CASE III.—*C*, a man, 52 years of age (looks 65), occupation, special mechanical, one year ago suffered from an attack of hemiplegia. History of symptoms and examination reveals that he has cerebro-spinal lues, probably of mixed form, but arteries of brain definitely involved. Examination: Headaches, dizziness, cranial nerve involvement; ethical sense dulled, changed personality noted in history: Pupils and all physical signs show organic destructive lesion of brain present. Judgment liable to be seriously

interfered with at any moment and in his position mistakes of vital importance liable to be made notwithstanding his apparent speed and accuracy at present. Furthermore he frequently falls because of serious interference with sense of position, and is liable to serious injury as a result of his condition. Needs treatment very much and should be relieved from position as soon as possible and not re-employed at former job.

CASE IV.—*D*, a man, aged 48 years, occupation, clerical. Suffers from tabes. At present no serious mental symptoms. Is energetic, active, and jovial, practical joker, optimistic (and well liked). Should be borne in mind as future developments detrimental to company may supervene. The possibility of adverse mental symptoms should always be considered possible in these cases. Should such symptoms develop, much damage could be done before nature of situation would be fully realized.

CASE V.—*E*, a man, aged 42 years—nomadic—Spanish War veteran—luetic. Employed three months as roustabout. Examination: Alcoholic history. Psychopathic personality (manic type). Ill humor at times; jovial, usually facetious; tendency to lying; physical condition below average; many nervous symptoms. Increased reflexes; lessened ability to do mental work. Superior type of intelligence (general); slow to arrive at decisions; does not always get viewpoint as he is apt to be inattentive; does not adapt himself to new situations with accuracy and is slow to "fit in" on new jobs; has very excellent language ability; a very superior range of information; fair mathematical reasoning. On account of this man's high intelligence, which is much lower than formerly, and on account of somewhat pleasing "personality" and aggressiveness, history of nomadism, he could easily become an agitator. Already, here only three months, he is expressing viewpoints about general scheme of things. He could be utilized to change tide of things in right direction, as he is a good mixer and has leadership qualities. A dangerous type, if his potentialities for evil go unrecognized.

CASE VI.—*F*, a man, aged 50 years—employed here three years in various capacities; past year as machinist's helper. Married; one son, aged 16 years. Education: Seventh grade. Intelligence: Very superior. Has rapid association of ideas and ability to express them. Above average ability to apply acquired knowledge. Visual and auditory memory above average. In trade test for machinist shows wide range of information which is not organized. History shows nomadic tendencies. Never in one place longer than two years, except here. Occupations have been varied and many. Has always thought people did not like him. Cries and laughs easily. Examination: Reveals a typical manic type—aggressive—paranoidal ideas. Thinks he has been imposed upon and discriminated against. Recently put in complaint to shop committee for rating as second-class machinist. Foreman justly objected for the reason that first-class machinists only are employed here and furthermore, while this man is one of the best workers and helpers he ever had, he does not feel that he is capable as a machinist. Resentment

and suspicion developed toward foreman and the company. Entire company was at fault. The man himself was the "injured one." He had many supporters.

Several interviews with this man revealed his personality and high intellect. An appeal was made along mental hygiene lines and this man modified his behavior and attitude immediately and will withdraw his application for rating. Furthermore, instead of becoming a disturber he is now a staunch supporter. His insight into his condition is unusual. This man was a real serious problem, but with careful handling and by stimulating the proper innate tendencies he has been started in the right direction. However, he should not be forgotten, but advantage should be taken of his high grade intellect and utilize his leadership qualities to good advantage. The loss of time, agitation, and disloyalty, encouraged during this man's "up period," would be difficult to estimate. (The following case is the report on the son of this man.)

CASE VII.—*G*, a boy, aged 16 years, son of machinist helper cited as Case VI. This boy is a definite local problem. He is known for his "badness"—steals—lies—is incorrigible—anti-social in his remarks and generally negative. Drifting towards more serious delinquency as a result of adolescent instability and manifesting many dementia præcox symptoms. Impulsive—negative—sudden, uncalled for laughter—sullenness—sex abnormalities.

Careful study of this boy shows him to have a very superior intelligence and many good traits. His interests were ascertained and conferences held with high school principal, and the boy given more work to do with the assurance to him that he would graduate six months earlier if he applied himself. To date those interested are pleased with result; but this boy should be "followed up" and given a real chance to go to a university, for he has the necessary intellectual qualifications. Definitely a community and school problem. Mental hygiene.

CASE VIII.—*H*, a man, aged 25 years. Occupation: Mechanic. Education: Seventh grade. Intelligence: High average.

Foreman noticed that he was not "doing his work with usual speed" and was neglectful and reticent and appeared to sulk when questioned and reprimanded for carelessness—he told the story: "Married woman 10 years his senior (widow with two children) two years ago. It appears that he sent her all of his pay-check every month. She 'ran' him in debt—groceries, clothing, furniture, etc., and after he insisted that she live with him at the camp she refused, wrote him a distressing letter and deserted him." First he was depressed, suicidal, then homicidal. Always despondent. Tearful.

Finally he became talkative and took up time of others telling his troubles—but no help. Foreman was about to discharge him on account of unsatisfactory work and the dangerous "mood" he was manifesting, when he voluntarily came for interview. Examination: Revealed a typical depressed type, suicidal, but also anxious to "get at" the other fellow.

Manifested great love for the children of his wife and cried profusely when they were mentioned. (The "drive" in this case was the paternal instinct manifesting itself vicariously in his wife's children.) A number of interviews were had and proper adjustments made; an attorney took charge of his case. His work immediately improved and his foreman expressed himself that he is doing better than ever before and is now cheerful. Had this boy been discharged without proper study and adjustment he would have been a menace ever after to industry. In his condition he was a menace here. He needs close follow-up work. The work done in this case saved this boy to himself and to the company. If he had been discharged the effects would have been far-reaching, for he is well liked.

CASE IX.—*I*, male, aged 25 years. Occupation: Sales. Definitely a potentially dangerous type. By careful direction and guidance this worker will be an asset, but if permitted to think along present lines he will be a menace and will some day cause trouble. Examination: Shows him to be suspicious, negative, at times surly, shut-in type of personality, frequently misinterpreting speech and conduct of others and referring everything they do and say to mean something derogatory to himself. Average intelligence. Rated as a good worker. Has excellent musical ability (could be used in camp activities but his egotism, selfishness and resentment make him undesirable at present). He has lost much time recently on account of considerable dental work. General condition and mental condition may improve as result of this work and due to some ideas of mental hygiene given to him.

CASE X.—*J*, a male worker, clerical—suffers from epilepsy. Has asked for outside work which it would be dangerous to offer him. Epileptics are always a menace to themselves and to others. Should be very carefully watched and kept at work in a place where he will not increase the accident hazard of his fellow workmen. At present is quiet—somewhat pleasing personality. Loses considerable time by being tardy. Should be treated.

CASE XI.—*K*, a male worker. Occupation: Driller. Rated as good driller by the chief driller foreman. Requested to be placed in line for promotion to foreman. Request refused—reasons given that he is not a leader, is pugnacious, destructive, and makes it difficult for those working against him. (Tower duty.) Information is that former foreman reports against him:

(1) Bothers him too much at night by telephone. Refused to take responsibilities. (This man's earnestness of effort and degree of accuracy—two very desirable traits—were misinterpreted by his former foreman, who is a man of much lower intelligence.) (2) Breaks equipment (works hard and liable to lose head). (3) Admits, however, that he is much better man, and is well liked by all men who work with him.

Present foreman reports: (1) Turns in best reports. (2) Keeps excellent logs. (3) Takes more than usual interest in work and maintains great interest (manifested in research work on work on redrilled wells). Considered high grade. Examination: Shows great confusion on test, but

where judgment is needed quiets down and reacts well. Examination unfair to report as final because of adverse conditions at time. Home is neat, tasty, high-class; wife very intelligent, ambitious for husband; one child, a little girl, 3 years old, with 6-year intelligence. Physical condition and habits very high. Recommend mental hygiene for one year with encouragement, and then a trial first vacancy thereafter. Will make good.

## *III. Specimens of Job Analyses § Made in Co-Operation with Engineer.*

### Foreman or Superintendent of Electrical Department.

#### duties.

The following is a summary of the duties of the head of aforementioned department:

Charge of operation electric plant and headquarters camp, boiler room, telephones and telephone system, power and light distribution, planning and supervising extensions, etc., to telephone and power systems, installation of motors, transformers, measuring instruments, switchboards, etc., placing requisitions for electrical material, repair parts for gas plant and electric plant, and attending to correspondence relative to same.

Should have considerable experience in steam engineering, especially the care and operation of high-speed engines and auxiliaries, be able to set valves, understand and take indicator cards, and make exacting adjustments. Should have a good knowledge of the theory and practice of gas engine operation, compressor operation (air and gas) and be able to combine theory and practice in diagnosing cases of trouble if the occasion demands it. Should be familiar with the principles of design, care, operation and installation of A. C. and D. C. generators, switchboard and switchboard instruments, able to lay out wiring diagrams, trace and correct electrical troubles, make estimates on new work. Should be familiar with the safety laws, relative to mechanical and electrical installations, as required by the California Industrial Accident Commissioners. Should be at least a high school graduate or equivalent, augmented by technical studies. Should be studious and observing, keep up to date on new engineering developments through the medium of engineering journals, catalogs and bulletins. Have

§ These analyses demonstrate what should be done by psychiatrist in industrial field. They are only preliminary but will serve as basis for future more intensive study.

executive ability, initiative, mechanical ability. Should be tactful, broad-minded and foresighted in the handling of men, encourage harmony and co-operation. In general, have a personality inspiring the confidence and respect of subordinates.

### First Engineer, Electrical Department.

#### DUTIES.

Operation and minor repairs of electric plant equipment—of steam-driven A. C. generators, high-speed engines, pumps, condensers, etc.

Must during tour fire in H. Q. boiler plant, in addition to plant duties.

Keep plant in neat and orderly condition.

Keep daily report of plant operation.

#### REQUIREMENTS.

*Previous Experience.*—Must have had experience in operating equipment similar to that listed above.

*Mental Qualifications.*—Must be able to read, write and talk English.

Must be able to copy figures, add, subtract, multiply and divide.

Must be able to read and comprehend the meanings of electrical instruments, both indicating and recording, and steam gauges, etc.

Should be of studious and observing type of mind and have a knowledge of the fundamental principles of the generation of electrical energy and of the general operation of small electrical generators and exciters.

Should have an operating knowledge of steam boiler equipment.

*Physical and Nervous Qualifications.*—Must be able-bodied, with good sense of sight, smell and sound. Must be of an observing nature, with a well-developed sense of co-ordination, and an ability to co-ordinate cause and effect highly developed along electrical lines. Should be calm and collected, and possess foresight and presence of mind in emergencies, and have an ability to locate ordinary plant troubles and enough initiative to fix same, so as to maintain normal operation under exceptional circumstances.

Must be able to receive and execute orders and to co-operate with others for best plant efficiency. Should be ambitious and anxious to learn, reliable and ready to help in emergencies.

## *IV. Studies in Causes of Turnover.*||

### The "Psychopathic Foreman" as a Cause of Labor Turnover.

One of the great causes of labor turnover, which seems to be almost constantly overlooked by employers and efficiency engineers in their efforts to reduce a large labor turnover, is that caused by the "psychopathic foreman." Few employers seem to realize the tremendous cost to industry of this type of a foreman, and few seem to have the courage and foresight to grapple with this problem in a scientific manner. The following table shows the great amount of harm which can be done by this particular type of a boss:

TABLE I.

| Reason of termination | No. terminated |
|---|---|
| Discharged for disobedience | 20 |
| Discharged as being "Undesirables." | 12 |
| Discharged for incompetence | 35 |
| Discharged on account of disagreement with the foreman | 10 |
| Quit on account of disagreement with the foreman | 97 |
| Discharged for losing time | 6 |
| Discharged for smoking on duty | 5 |
| Quit to take a vacation | 15 |
| Quit on account of wages being insufficient | 32 |
| Discharged on account of wrong job being given, *i. e.*, because he was hired for a job he knew nothing about | 11 |
| Deaths | 2 |
| Miscellaneous causes | 30 |
| Quit—needed money and couldn't wait until payday | 4 |
| Quit on account of sickness, and of being physically unable to perform tasks assigned to them | 10 |
| Quit to go to the country to pick fruit | 10 |
| Transferred | 25 |
| Total terminations | 352 |

| | |
|---|---|
| Period covered | 3 months. |
| Force employed | 250 |
| Yearly rate of turnover | 416 per cent. |

|| A study made by Edward Williams, Berkeley, California, a special student of psychiatrical problems in industry, for the author. The results of the study demonstrate that intelligent observers, if carefully trained, can be of great value to psychiatrists in industry.

ANALYSIS OF VARIOUS REASONS GIVEN FOR TERMINATIONS.

1. In most cases where men were discharged for disobedience it was usually over some trivial matter.

2. Undoubtedly a great injustice was done the individual where men were discharged by this foreman as being undesirable, it usually being on account of a peculiar whim of this foreman, and not the result of an intelligent opinion as to whether or not the individual concerned was an "undesirable."

3. Where men were discharged for being incompetent, it would have been possible to have eliminated a large percentage of these if these men had been given any kind of a simple mental or trade test, and in most cases they probably could have been eliminated if skilled interviewers had been employed in the employment department of this plant.

4. Discharged on account of disagreement with foreman. In almost every case these men were discharged while this "psychopathic foreman" was in an angry mood, and as the result of his arrogant, bellicose attitude.

5. Quit on account of disagreement with the foreman. This is analogous to the preceding reason, the only difference being that the employee quit before he was discharged. This group constitutes 27 per cent of the entire number of terminations. It has been estimated that the cost of replacing each one of these individuals would amount to $40.00 for each employee, or $3880.00 for a period of three months, which exceeds the yearly salary of this foreman.

6. The next three reasons given in Table I are mostly unavoidable terminations; except perhaps in a few cases where the reason given was that of "taking a vacation," it was a mere excuse to cover up their real reason for terminating.

7. Quit on account of wages being insufficient. While the wages paid in this plant are the same as paid all over the Pacific Coast for this type of work in similar plants, it is doubtless true that it is less than the wages paid less skilled labor in many other fields.

8. Discharged on account of the wrong job being given the man. In all these cases the men were hired for positions for which they were unqualified.

9. In all cases where men quit on account of being physically unable to perform tasks assigned them it would have been possible

to have avoid had any system of giving employees physical examinations been used by this corporation.

10. Quit to go to the country to pick fruit. In this particular department this reason doesn't make any appreciable difference in the total terminations, but it serves to illustrate a phase of seasonal employment, where men at certain seasons of the year leave their work to seek other employment. In California this probably is quite a serious problem for many employers at certain seasons of the year.

All of the figures in the foregoing table were actually obtained from one of the departments of a large manufacturing plant of San Francisco. The foreman in charge of this department, is of the arrogant, bellicose, "carry-a-chip on the shoulder" type of a foreman, who knows absolutely nothing about handling men. He is constantly swearing and ever abusing his men over trivial matters, which would easily be settled and smoothed over by a more intelligent and diplomatic type of a foreman. He says that "I always aim to rule my men by putting the fear of God in their hearts," which very aptly shows the type of a man he is. While it has not been possible to make a mental examination of this foreman, it is believed that he would not test more than 12 years on a Binet scale. He has obtained his present position as a reward for many years' service, and for no other reason.

## Brief Summary and Conclusions.

The status of psychiatry of industry from observations made in California may be stated briefly:

1. Sporadic interest in the industrial field by practicing psychiatrists, institutional psychiatrists, and industrial and labor leaders.

2. Definite interest by a few executives of industrial organizations. Several of these have encouraged and permitted research work in industrial psychiatry within their respective plants (*e. g.*, a shipbuilding corporation, a calculating machine manufacturing company, a large soap manufacturing company, a large oil company). Only one of these, the latter, has established a personnel department from a psychiatrical point of view. The reports on the shipbuilding corporation and calculating machine company have already been published; the report on 325 examinations for the

soap company is in course of preparation, and communications regarding the progress of the established department in the oil company will be published from time to time.

The result of three years' study of industrial problems from a psychiatrical point of view leads to the following conclusions:

(a) Every large industrial organization should have a psychiatrist on its staff.

(b) Groups of small industrial organizations should seek the services of a consulting industrial psychiatrist.

(c) Labor unions should welcome the advice and guidance of an industrial psychiatrist.

(d) Every university should establish a department of industrial psychiatry.

(e) Personnel departments should be under the directorship of industrial psychiatrists.

NOTE.—The late Dr. E. E. Southard pointed out that the study of the worker as such was not new and that we, as psychiatrists, had not made a discovery but were only awakening to the realization that we are badly needed in this field. The conclusions of Dr. Southard in his article, "The Mental Hygiene of Industry," published in *Industrial Management*, February, 1920, are too vital to be forgotten. The most important conclusions given by him regarding mental hygiene of industry are given in full as follows:

"This term mental hygiene is coming into general use to cover the expert activities of psychiatrists (*i. e.*, medical men interested in the problems of mental disease, including the mildest forms of temperamental deviation), psychologists (*i. e.*, scientific and theoretical experts, who are now turning attention to methods of mental testing designed to improve and replace the hit-or-miss methods of the past) and various non-professional or semi-professional aides (such as social workers with special experience in character-handicap cases).

"The recent improvements in employment management and all activities dealing with industrial personnel show that industry is ready for the new movement and employment managers everywhere are displaying the keenest interest in the new ideas.

"The earlier literature of industry conclusively shows that the 'mental hygiene of industry' is nothing new in its essence (witness many older references to the human element, etc.), but to-day's contribution is the organization of older interest for a systematic attack on industrial personnel problems. The keynote of this systematic attack on industrial personnel problems by means of mental hygiene data and methods is the pooling and co-operative combination of expert medical and psychological and sociological interests: in brief, the invoking by the expert in industrial

personnel of the aid of all available experts in personality, to the study of which the whole personnel problem must reduce.

* * *

"The interested personnel man or lay reader is implored not to take sides for one or other claims or counter-claims by medical men, psychologists and others concerning the virtues of special methods. The topic is growing and a little controversial; but on the whole the quarrels about method are superficial and the unanimity of experts extraordinary (no doubt the trials of the war served to mature and season the experts on all sides).

"Another warning. Every time the world has tried to measure things more accurately many foolish persons have risen to protest. Not a few medical men and psychologists will rise to say over the same formula against the mental hygiene of industry. It is to be hoped that, at this late date of the world's history, we can jump this zone of senseless protest against what must inevitably succeed, namely, a program of more expert study of anything whatever, including the human personality, wherever at work.

"The movement for a mental hygiene of industry is neither an outgrowth of the efficiency movement (Taylorism and the like) nor an outgrowth of the workmen's welfare movement (economic interest in shorter hours, better working conditions and the like), though mental hygiene does effectively combine 'efficiency' and 'welfare' (as it were, F. W. Taylor and Jane Addams, but in terms of William James).

"Perhaps the argument for a mental hygiene of industry may be put in a nutshell form as a question: Why should not industrial managers seek the aid of (a) those who can measure at least a few of our mental capacities and have shown their abilities in the war work, of (b) those who are the best specialists we yet have in temperament and the best experts in grievances yet developed, and of (c) others less professionally trained who are capable of tracing out or helping to trace out the actual situation of (*e. g.*) labor "turnover" as shown in the individual instance?

"In short, why not help to push on the movement for individualism in industry that everybody sees coming and ardently hopes for?"

The researches of Dr. A. Warren Stearns should be carefully considered. Dr. Stearns compiled a group test[7] which I consider is of the greatest value in "spotting" surveys. I am using it in my industrial work and can positively state that it should be in more general use. Dr. Stearns' work, along industrial lines in the navy, is a classic.[8]

Miss Mary C. Jarrett's researches in industrial psychiatry are well known and her recent contribution on mental hygiene of industry should be consulted.

Dr. Herman Adler's conclusions deserve careful study.

Other earnest workers in this field are contributing their observations, and in a subsequent article an attempt will be made to outline specifically their communications in order to present the progress of industrial psychiatry.

The good in industry will need little mention except to call attention to it as the foundation for the building of a wonderful superstruction of loyalty and co-operation. The material is there, but crumbling under the constant weathering by the disintegrating forces of destructive thinking and abnormal human behavior.

The psychiatrist, acting in co-operation with specialists in other branches of human knowledge, will, we predict, aid in the solution of industrial problems.

## BIBLIOGRAPHY.

1. Jau Don Ball and A. M. Kidd: The Relation of Law and Medicine in Mental Diseases. California Law Review, November, 1920, Vol. IX, No. 1.
2. E. E. Southard: Mental Hygiene of Industry. Industrial Management, February, 1920.
3. "California Oil Worker": May 15, 1921, Bakersfield, California.
4. Tead and Metcalf: Personnel Administration. 1st Edition. MeGraw-Hill Book Co., Inc., 239 W. 39th St., New York.
   NOTE.—A most desirable book for library of psychiatrists who are interested in industrial work or who contemplate entering this field.
5. See Wm. McDougall's Social Psychology, 13th edition.
6. The ten qualifications enumerated and the compilation of the method is the work of the author, although the basis for scoring and enumeration of some of the qualities is derived from W. D. Scott's idea, as worked out in the army.
7. Jau Don Ball, M. D.: The Correlation of Neurology, Psychiatry, Psychology, and General Medicine as Scientific Aids to Industrial Efficiency. AMERICAN JOURNAL OF INSANITY, April, 1919, Vol. 75, p. 4.
8. A. Warren Stearns: The Classification of Naval Recruits. California State Journal of Medicine, April, 1919.

# REPORT OF A CASE OF EPIDEMIC ENCEPHALITIS WITH CORD CHANGES SUGGESTIVE OF THE POSSIBILITY OF AN EARLY SYRINGOMYELIA.*

By ADA F. HARRIS, M. D., *Pathologist,*
*Worcester State Hospital, Worcester, Mass.*

Since nineteen hundred and seventeen the literature on an apparently wide-spread affection, called by Von Economo [1] "Encephalitis Lethargica," but for which the more appropriate title, Epidemic Encephalitis, has been suggested by Wilson,[2] has increased at a rapid rate; thus we find in Volume XVII, *Index Medicus,* 110 references, in Volume XVIII 365 references, and attempts are being made to classify the different forms this disease assumes.

Buzzard [3] divides the various types into three groups, corresponding to the different anatomical levels: I. Cases characterized by hemiplegia, hemianesthesia, hemianopsia; II. Symptoms resembling paralysis agitans, basal ganglion group; III. Cases characterized by disturbances of functions of the cranial nerves; but states the clinical and pathological observation prove the disease to be more wide spread than the clinical symptoms suggest.

MacNalty [4] groups them clinically into six groups: I. Cases with general symptoms and without localizing signs; II. Cases with third nerve paralysis and general disturbance in the function of the central nervous system; III. Cases with facial paralysis and general disturbance in the function of the central nervous system; IV. Cases with spinal manifestations and general disturbance in the function of the central nervous system; V. Cases with polyneuritic manifestations and general disturbance in the function of the central nervous system; and VI. Cases with mild or transient manifestations (so-called "abortive" cases).

Tilney and Riley [5] have distinguished nine clinical sub-groups in the cases reviewed by them: I. Lethargic; II. Cataleptic; III. Paralysis agitans; IV. Polio-encephalitis; V. Anterior polio-

* Read at the seventy-seventh annual meeting of the American Medico-Psychological Association, now The American Psychiatric Association, Boston, Mass., May 31–June 1, 2, 3, 1921.

myelitis; VI. Posterior poliomyelitis; VII. Epilepto-maniacal; VIII. Acute psychotic; and IX. Neonatorum.

Various other types and combinations have been described according to the predominating symptoms; meningo-radicular, descending radicular, cerebellar, various plegias (*hemi, di, mono*), herpetic. It will be readily seen in most instances the type has been named for the predominating clinical symptom, but in many of the cases there are clinical symptoms referable to one or more types. It is most probable that as our knowledge of the disease increases we shall evolve a more or less permanent classification based on the general symptoms due to a toxic infection, and the nervous symptoms, general and local, the over-shadowing clinical symptoms due of course to the anatomical level of the central nervous system at which the disease fulminates.

I have not seen in the literature a report of cord lesions similar to those presented in the case under consideration, although clinically it might fall into several of the above types, paralysis agitans, acute psychotic, meningo-radicular, descending radicular or choreo-psychotic as described by Archambault.[6]

The favorite site for the histologic changes appears to be the basal ganglia, tegmental and pontine regions with the more or less characteristic clinical manifestations, but pathological observation has shown the process to be a more or less generalized one throughout the whole central nervous system, with the greatest changes in the above areas, though it may fulminate at any level.

Choreiform movements, myoclonic twitchings, katatonic rigidities and tics of various kinds have been mentioned not infrequently by various writers, but usually as a symptom arising in the course of the disease or as a sequela thereto. Buzzard[3] reviewed numerous cases where choreiform movements and fibrillary twitchings occurred in the course of the disease or developed a short time following, but had not seen a case of true athetosis as a sequela. Marie and Levy[7] cited several cases where the involuntary movements were choreiform in type and others of myoclonic twitchings. Bassoe[8] described a type which he called the meningo-radicular type, where the choreiform movements and meningeal disturbances were the prominent symptoms. Pardee[9] reviewed several cases of acute onset with pain, choreiform movements, hyperesthesia, fever and delirium.

Psychic disturbances have been of frequent note, usually referred to as a symptom in the course of the disease and mentioned by various writers in their review of cases. At times the psychic disturbance which appears to be increased at night, resembles a manic state, or again visual and auditory hallucinations are prominent. The predominance of these symptoms have led Tilney and Riley [5] to speak of the "Acute Psychotic" type, and Archambault [6] referred to cases in which the choreiform movements with psychic disturbances in the early stages were the prominent symptoms as the "Choreo Psychotic" type.

The following case bears marked similarity to the clinical symptoms noted by the above-mentioned observers, as well as by Honse, [10] Barker [11] and others, but the histologic changes in the cord are of such character that it seems the case should be presented in detail:

J. S. (Worcester State Hospital No. 33248), single, age 26 years, admitted June 19, 1920.

*History.*—Negative relative to findings predisposing to this illness.

*Personal.*—He served in the World War, sustained no injuries and as far as known was not gassed. In the winter of 1919 he was severely ill in France with influenza. He made a statement to his mother that his illness was worse than the rest of the war. He returned to this country in April, 1919. There were no complaints until June 5, 1920. He returned from work in a carpet-factory at noon and worked in the garden until about four o'clock in the afternoon, when he came into the house complaining of severe pain in the palm of his left hand. The next day the pain remained about the same, having prevented sleep during the night. He consulted a physician, whom he stated told him it was rheumatic and he received some "anti-rheumatic" pills.

*June 9, 1920.* The pain had increased in severity extending up the arm. He visited another physician and was given bromides to induce sleep. The pain was not relieved and he noticed his hand began to tremble. He was particularly restless and the pain seemed more severe at night. He had a dull frontal headache.

The second physician whom he consulted stated that he saw the patient when he called at his office seeking relief for the pain in his hand, and not again until he was called to the house on two occasions before sending him to the hospital. The pain increased, extending up the arm and involving the other arm to a lesser degree, occurred at irregular intervals and was lance-like in character. The trembling in his hand developed into coarse, jerky, irregular movements, but as these movements increased he did not complain of as intense pain.

About the end of the first week (could not ascertain exact day) he developed a delirium, muttered to himself, talked incoherently. He became

exceedingly restless at night, not remaining in bed, but would dress and undress, jump over the bed, pack his clothing, stating he was going home, and tore the bed clothing. The family could not restrain him and he escaped from the house the night before admission without any clothes on, which was the precipitant cause of his being sent to a hospital for mental diseases.

His mother stated he had not slept for two weeks, and the jerky move ments were not confined to his arms, but were present in the legs. She stated when she touched him the movements were worse. He also had two severe, prolonged spells of hiccoughing before admission.

*June 19, 1920.* Admission. The patient was quiet, but appeared exhausted. His face was pale, his tongue coated and he had a fetid breath. The skin was dry and hot. There was slight dermatographia present. Lungs and heart were negative. Pulse rate 96, systolic blood pressure 144, diastolic 72. His grips were unequal, that of the right being greater than the left. The knee-jerks were sluggish. Babinski was absent and there was no ankle clonus. The chest expansion was equal on both sides, but of jerky, irregular character. He complained of a dull frontal headache, but the pain in the extremities had disappeared. Choreiform movements were in evidence everywhere, but particularly of the extremities—irregular, coarse, jerky, incoordinate movements. There was slight fibrillary tremor of the tongue and jerky movements of the chest muscles. A slight touch on the abdomen initiated a peculiar tremor. The sensation to pin-prick was not impaired. When in the erect position there was a peculiar inward curve to the back, his legs appeared stiff and his head was bent forward. On sharp command he assumed the correct position, but only momentarily, quickly resuming the other posture. He staggered while walking and held his hands out as though to catch some object.

*Hospital Residence.—June 21st.* Late in the afternoon he went about the ward throwing over chairs and bed-side tables. He tore up bed blankets, jumped over first one and then another bed.

During the day he remained quiet, but was extremely noisy at night, continually getting in and out of bed and talking. He answered questions logically during the day, but at night did not recognize the physician and talked in a steady stream, in an irrelevant and incoherent manner and appeared confused. His temperature ranged from 99° to 101.4° F. The Wassermann on the blood serum was negative.

*June 22d.* Appeared stupid, but was easily aroused when addressed. He seemed to remember remote things, but was hazy about recent ones, and there appeared to be clouding of consciousness.

*June 24th.* There was no change in his condition. He had a severe clonic spasm of all the muscles of the upper extremity and died a few minutes later.

*Autopsy.*—Six hours post mortem, by Dr. M. M. Canavan.

The body was of medium size and fairly nourished. The skin was grey-white with mottling about the neck. There was slight abrasion on the lip and chin. The lymph nodes were not palpable.

Ventral Section: The fat was very moist, the muscles red and firm. The peritoneum was shiny. The mesenteric lymph nodes were not enlarged.

The pericardial sac showed a slight excess of fluid. The coronary arteries showed commencing thickening and there were minute placques in the arch of the aorta. The cardiac muscle was yellowish-red and resisted the finger. The pleura over the lowest lobe of the right lung glistened and there was irregular reddish-blue mottling on the surface. Cut section gave the impression of peri-bronchial hemorrhages. Edema and congestion were brilliant.

The capsule of the spleen appeared slightly thickened and the pulp was dark red and congested. The liver was acutely congested. The cortex of the kidneys was injected light pink, and the pyramids highly injected, dark red. The adrenals were both enlarged and firm. The mucosa of the gastro-intestinal tract was slightly congested and the ileum had shaven beard appearance.

Brain: Weight 1465 grams. Base: The cranial nerves were negative. The basilar vessels were not thickened. The fluid in the third ventricle was bloody. The pia mater was generally injected. Superior surface: The dura was faintly thickened and the pia injected throughout. The brain had a swollen appearance, and the frontal section behind the chiasm showed the vessels hyperemic and the brain edematous. Section through the medulla the same. There were hemorrhagic points in the floor of the fourth ventricle. All the white tissue had a pinkish appearance.

The base of the skull revealed no pus in sphenoid or middle ears.

Cord: The dura was elastic and the pia brilliantly injected. In cross-section the grey matter stood out in the lumbar and cervical regions brilliantly pink.

Post mortem examination of the cerebrospinal fluid from the third ventricle. Cells 217. Small lymphocytes 165; large lymphocytes 27; endothelial 12; pial 3; unclassified 10. The gold curve was negative. Culture from third ventricle sterile.

Microscopic examination of the trunk tissues hematoxylin-eosin stain.

Heart: Cut section through septum. Edema, cloudy swelling, fibers swollen and broken, localized area of degeneration about blood vessel where there appeared to be an increase of connective tissue cells and two polymorphonuclear cells, slight hemorrhage between some of the muscle fibers.

Spleen: Vessels distended and a few showed perivascular hemorrhage.

Liver: Edema, cloudy swelling, fatty degeneration, vessels engorged, a few showed perivascular hemorrhage. There was necrosis about some of the inter-lobular vessels, which showed a slight increase of cells.

Kidneys: Congestion marked. The capillaries throughout cortex and medulla were distended, some of which had ruptured with perivascular hemorrhage into the tissue. The epithelial cells were swollen, the nuclei in some stained lightly while others took the stain fairly well. Many of the cells lining the tubules were swollen and had separated themselves from the basement membrane.

Adrenal: Capillaries injected. Edema and cloudy swelling.

Pituitary: Anterior lobe, the sinuses were distended with blood. The cells stained deeply, were largely basophilic, and there were scattered chro-

matin masses and smaller granules. A few necrotic areas were observed. Brain and cord placed in 10 per cent formalin solution, and sections from mid-brain in Zenker's at time of autopsy. Sections were stained cresyl violet; Van Gieson; phosphotungstic acid, hematoxylin; Mallory's aniline blue; Weigert, and frozen sections from the cord Schlarch R.

Pia mater: Slightly infiltrated with small round cells and plasma cells. Vessels were distended. The lymphocytes were deeply stained. The infiltration of the pia appeared greater in the region of the cerebellum.

Cortex: Sections from frontal, parietal and occipital region (cresyl violet stain) showed scattered changes. The architecture of the cell layers was not disturbed. Selected areas appeared altered while cells in close proximity were apparently unchanged. The deeper layer of cells suffered most, for the most part took the stain poorly and irregularly. In some of the pyramidal cells the nucleus stained deeply while the Nissl bodies were poorly represented, while others showed swollen poorly staining nucleus with absence of processes, and the cytoplasm faintly stained. There was irregular increase in glia cells. The vessels varied in the cortical areas. The veins appeared distended with occasional slight cuffing with round cells. An occasional vein was observed where the lumen of the vessel was narrowed and the wall of the vessel infiltrated with round cells, which took the stain deeply, a few plasma cells and a number of rod-shaped cells.

The changes in the mid brain were more marked than in the cortex. Sections from the pons, thalami and internal capsule showed increase in glia cells, in many instances the vessels or nuclei of cranial nerves appeared to be the foci for attracting the glia cells. The changes in the nerve cells vary in the same group. The nuclei of the third nerve took the stain deeply and the cytoplasm also, in some the cells appeared as a dark homogeneous staining mass. In the motor root of the fifth the cells stained more irregularly, some showing Nissl bodies poorly stained or absent, the cells of irregular shape, nucleus absent or eccentric with varying degrees of chromotolysis. The pontine nuclei showed much the same changes with scattered neuronophagy.

Figs. 1 and 2 show increase of glia and round cells beneath the floor of the fourth ventricle (upper level) and about pontine cells.

Beneath the floor of the fourth ventricle (Fig. 3) is considerable hemorrhage into the tissue. Smaller foci of hemorrhage were noted throughout the mid brain and in the cerebellum. The vessels were engorged, the arteries as well as the veins showed perivascular infiltration of round cells, rod cells and plasma cells (Figs. 4-5). Frequently, this cellular infiltration extended for some distance into the tissue surrounding the vessels with slight perivascular hemorrhage. Especially about the veins, but to a lesser extent in the brain substance, were noted small, slender rod cells. These frequently appeared within the lumen of the vessel, in the vessel wall and perivascular. The arrangement was not constant but the numerous instances in which they appeared at right angles to the vessel wall was striking. They stained lightly with cresyl violet, and were also observed in the pons. The small, round lymphocytes for the most part stained deeply, also the plasma cells.

The cellular infiltration varied, sometimes appeared as a distinct cuffing about the vessel, in other instances the Virchow-Robin spaces were packed with cells, and in still other instances they appeared collected more densely at one pole of the vessel.

Celloidin sections through pons and internal capsule stained with cresyl violet showed numerous red bodies. The greater number were round or oval in shape, homogeneous in appearance, and varied in size, some being smaller than a red cell and others larger than a pyramidal cell. They were irregularly distributed and appeared in parenchyma as well as in the perivascular spaces.

Cerebellum: The Purkinje cells stained poorly, for the most part appeared as faintly staining shadow cells without a distinguishable nucleus, the processes being lost. They were swollen and in many instances were not seen. The vessels showed the same infiltration here as elsewhere and there were a few small points of hemorrhage.

Cervical region cord: The grey matter showed numerous cavities (Figs. 6, 7 and 8), some of which encroached into the white matter. Frequently these cavities were found encircling a vessel or anterior horn cell, as though the tissue had receded from same and they remained as an isolated island (Fig. 10). These cavities were numerous, as shown in Fig. 8, and frequently coalesced. In the grey matter there was a large cavity extending into the white matter of the posterior column, with many smaller cavities throughout the grey matter (Fig. 7). In one of the cavities there appeared to be a slight hemorrhage. The lining of the larger cavities appeared to be of a homogeneous substance, and this same homogeneous substance appeared in the grey matter which was pink with the eosin-methylene-blue, and yellow-brown with the Van Gieson stain. Cresyl violet stain showed many of the cavities had increased number of cells about same (Fig. 11), the small lymphocyte predominating although a few plasma cells were found. The rod cell, so numerous in the mid brain, was not seen in the cord sections. The cavities did not connect with pia, nor with central canal; they did not take connective tissue stain with Mallory's aniline blue. The vessels presented the same picture as described for the mid brain, perivascular infiltration, more frequently the Virchow-Robin spaces were packed with cells (Fig. 10), (Fig. 12), or perivascular infiltration appeared mostly as a distinct cuffing. Occasionally a smaller vessel appeared thrombosed.

The cells of the anterior horn showed advanced chromotolysis, were shrunken, in some the nuclei were missing and the processes gone, the Nissl bodies and tigroid substance were absent or stained poorly.

The glia cells were increased irregularly throughout the grey matter, especially in the posterior horns (Fig. 13).

The spinal canal was distended and showed slight cellular increase at some of the levels. The cells of Clark's column showed cloudy swelling and chromotolysis (Fig. 14).

The white matter appeared rarified and numerous small lightly stained areas about the central axons suggested cloudy swelling especially about the periphery of cord.

The size and number of the cavities varied at the different levels, as will be seen by sections from the cervical, thoracic, and lumbar regions, but similar histologic changes were noted throughout the various levels. (Figs. 6, 7, 8.)

## Discussion.

The case is undoubtedly one of Epidemic Encephalitis; the clinical picture, onset, temperature, paralysis agitans attitude, delirium, confusion, apathetic attitude, choreiform movements have been noted by various writers. The pathology of the mid brain is not unlike that as described by Buzzard,[3] Tilney and Riley,[5] Bassoe and Hassin,[12] Calhoun,[13] Netter,[14] and others, but similar cord changes I have not noted in the cases reviewed in the literature. The possibility of a beginning syringomyelia from the numerous cavity formations and the degeneration in the grey matter of the cord, due to an inflammatory process is not unlikely, if we regard syringomyelia as a syndrome rather than a disease entity, as many investigators believe.[15]

Schlesinger concludes that spinal cord cavities may be due to varied anatomically different processes, and mentions different types of syringomyelia, each differing from the other in origin and pathology: 1. Malformation; 2. Tumor formation; 3. Vascular disorders without evidence of gliosis; 4. Syringomyelia with gliosis, and 5. Pacchymeningitis and leptomeningitis with cavity formation.

Certain it is that Epidemic Encephalitis is contributing much to neuropathology, and infection has played a greater rôle than heretofore supposed. The question as to how many of the well-recognized clinical neurological pictures, due to a chronic degenerative change, have been initiated by an acute or sub-acute infection involving the central nervous system remains unanswered, but from the above case and other current cases appearing in the literature, it would seem that infection, however remote, must be considered in many of the neurological conditions.

## BIBLIOGRAPHY.


1. Economo: Wien. klin. Wchnschr., 1917, Vol. XXX, 581-585.
2. Wilson, S. A. K.: Epidemic Encephalitis; Lancet, London, Vol. II, July, 1918, p. 7.
3. Buzzard, E. Farquhar, and Greenfield, J. G.: Brain, January, 1920, Part IV, Vol. 42, pp. 305-338.
4. MacNalty, A.: Report of an Enquiry into an Obscure Disease Encephalitis Lethargica. Report to the Local Government Board, No. 121, London, 1918, p. 12.
5. Tilney, Fred, and Riley, Henry Alsop: Epidemic Encephalitis, Neurological Bulletin, Vol. II, No. 3, March, 1919, p. 106.
6. Archambault, LaSalle: Choreo-Athetoid and Choreopsychotic Syndromes as Clinical Types or Sequelæ of Epidemic Encephalitis: Archives of Neurology and Psychiatry, Vol. IV, No. 5, p. 484 (November), 1920.
7. Marie, P., and Levy, Mlle. G.: Plusiers cas de mouvements involontaires d'aspect particulier apparus après un épisode febrile grippal et, pour certains, après des signes d'encephalite léthargique; Revue Neurologique, Vol. 35, pp. 300, 511-1919.
8. Bassoe, Peter: The Delirious and the Meningo Radicular types of Epidemic Encephalitis, Jour. A. M. A., Vol. 74, No. 15, April 10, 1920, p. 1009.
9. Pardee, Irving H.: An acute Descending Radicular Type of Epidemic Encephalitis. Archives of Neurology and Psychiatry, July, 1920, Vol. 4, No. 1, p. 24.
10. House, W.: Epidemic Encephalitis, Jour. A. M. A., Vol. 74, p. 372, February 7, 1920.
11. Barker, Cross, Irwin: On the Epidemic Acute and Sub-acute non-suppurative inflammations of the nervous system prevalent in the U. S. in 1918-1919: Encephalitis, Encephalo Myelitis: Polyneuritis; and Meningo-encephalo-myelo neuritis. Am. Jour. Med. Sc., Feb., 1920, Vol. CLIX, No. 2, p. 193; March, 1920, Vol. CLIX, No. 3, p. 337.
12. Bassoe, Peter, and Hassin, Geo. B.: A contribution to the Histopathogy of Epidemic ("Lethargic") Encephalitis. Archives of Neurology and Psychiatry, Vol. II, No. 1, p. 24 (July 1, 1919).
13. Calhoun, Henrietta: Histopathology of Brain and Spinal Cord in case presenting Post Influenzal Lethargic Encephalitis Syndrome. Archives Neurology and Psychiatry, January, 1920, Vol. 3, p. 1.
14. Netter: Lethargic Encephalitis. Bull. Acad. de med., Paris, Vol. LXXIX, 1918, p. 237.
15. Thomas and Quercy: Syringomyelia, hyperplasie du tissue conjonctif fibres musculaires striees dans la moelle. Nouv. iconog. de la Salpêtrierè, 1913. Vol. XXV, p. 364.
16. Schlesinger, H.: Die Syringomyelie. Ed. 2, Wien and Leipzig, 1902.

## DISCUSSION.

DR. H. W. MILLER.—I think this is a rather important contribution to the literature of epidemic encephalitis, and illustrates the necessity of the point I made in my remarks before—that the laboratory should adjust itself to do the newer work.

There is one point that I did not hear, namely, what were the physical findings to suggest syringomyelia? I want to ask Dr. Harris if there were any clinical symptoms of syringomyelia?

DR. MYERSON.—Although I recognize the importance of the contribution, I do not see just why the doctor calls this case syringomyelia. She has described what seems to be cysts of softening, not at all like the lesion of syringomyelia. These cysts do not communicate with the central cavity and they are not apparently lined by anything resembling the endothelial lining of the central canal. There is nothing that looks very much like gliosis. There is one point that I would like to emphasize, though perhaps not relative to this disease, and that is that many diseases which are called degeneration are infectious in origin. It is probable that certain cases of syringomyelia start this way, and just how others start is not so clear.

DR. ADA F. HARRIS.—Answering Dr. Myerson: Thomas and Quercy, and many other investigators, do not regard syringomyelia as a disease entity, but rather as a symptom due to various causes, malformations, hemorrhage, tumors, etc. Some investigators distinguish two forms, pseudo and true, the former being due to various causes, the latter, the form to which Dr. Myerson refers.

I did not state this was a case of syringomyelia, but suggested the possibility of a beginning process.

Answering Dr. Miller: There were no clinical symptoms of syringomyelia, with the possible exception of loss of sensation. He was at first sensitive to pin prick, but later did not appear to be, although it was difficult to judge whether this failure to respond was due to cloudiness or a true loss.

Atrophy of muscles have been mentioned by both Pardee and Riley in some of the cases of the spinal form of encephalitis reported by them.

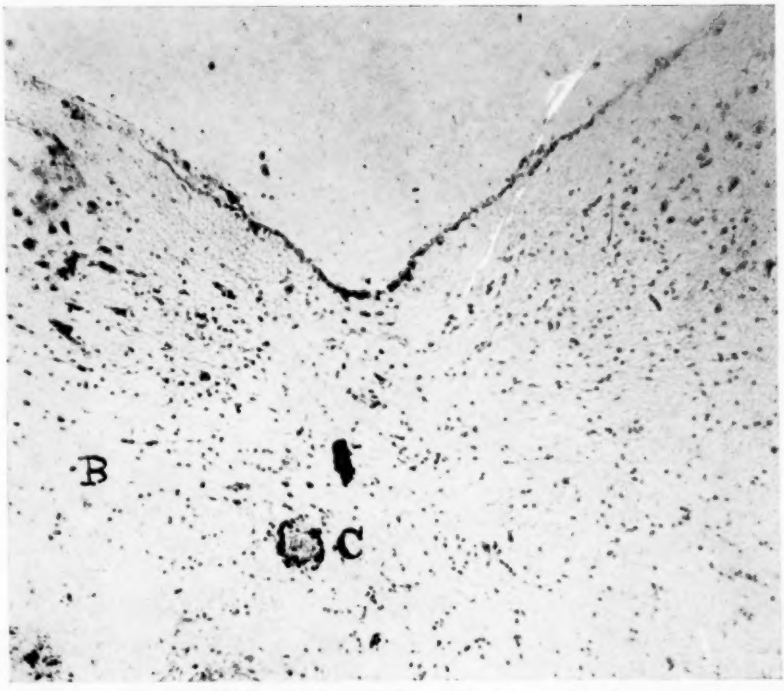



FIG. 1.—Increase of glia cells beneath floor of fourth ventricle (upper level).
B. Small edematous areas.
C. Cellular infiltration, perivascular.

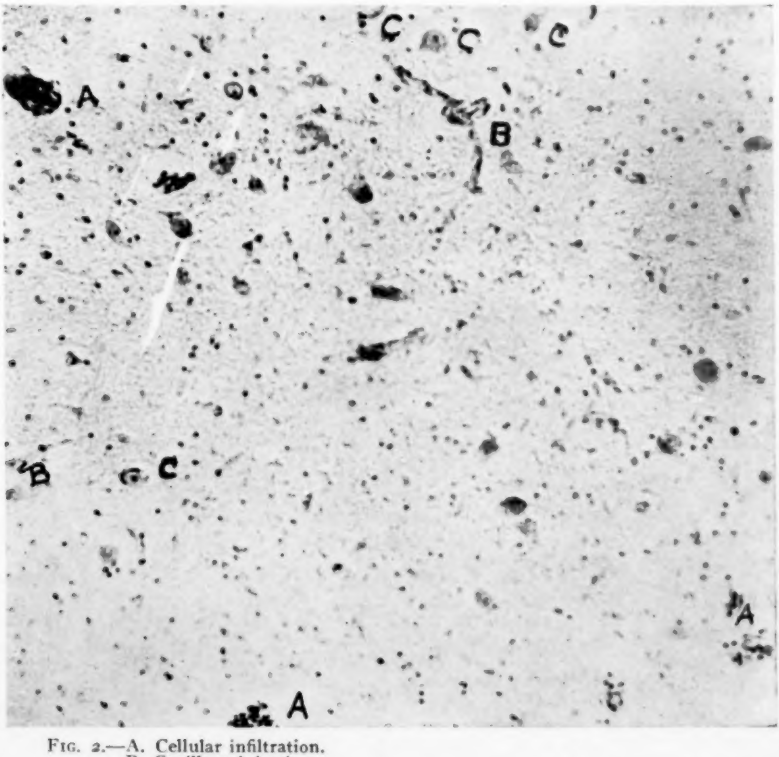



FIG. 2.—A. Cellular infiltration.
B. Capillary injection.
C. Chromatolysis and cloudy swelling nerve cells, with processes gone.

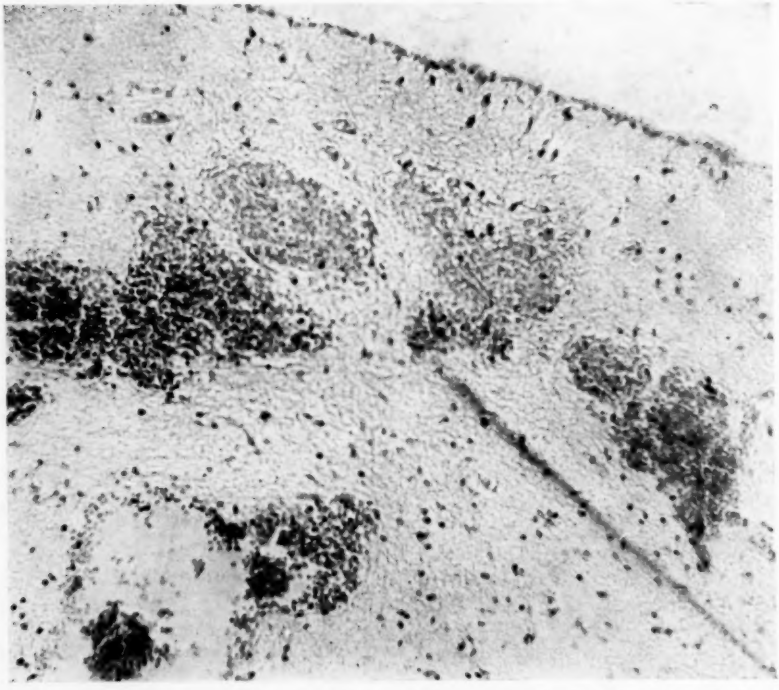


FIG. 3.—Hemorrhage, perivascular and into tissue, beneath floor of fourth ventricle, upper level.

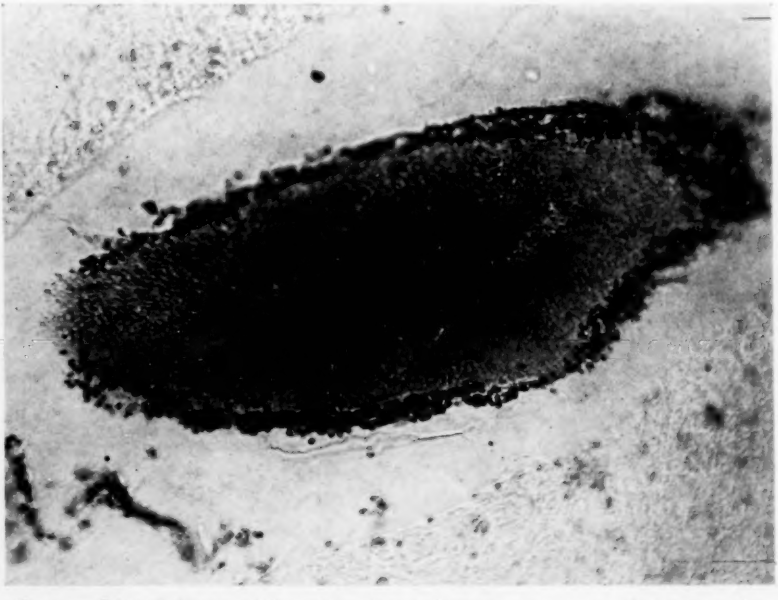


FIG. 4.—Distended vein with perivascular infiltration of round and plasma cells. (Internal capsule.)

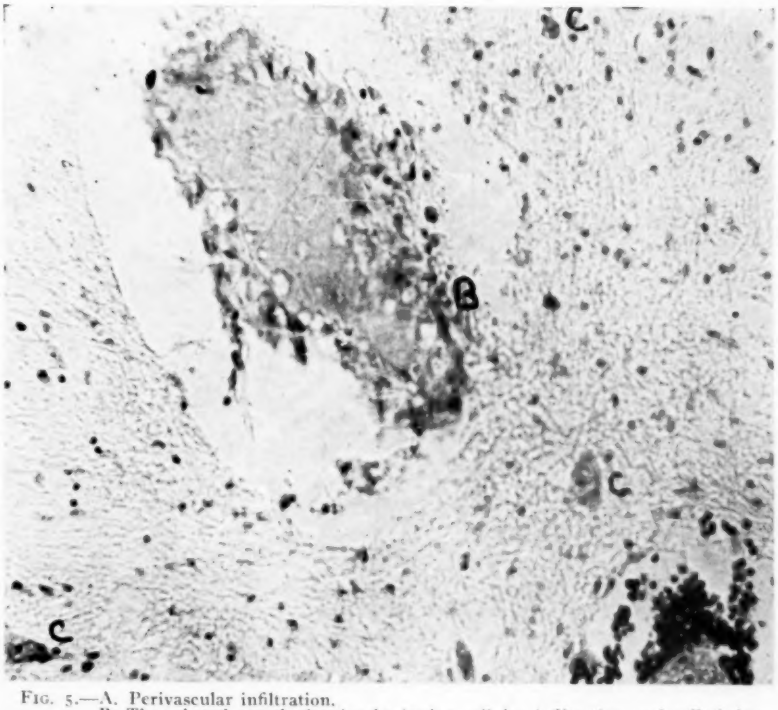



FIG. 5.—A. Perivascular infiltration.
B. Thrombosed vessel, showing beginning cellular infiltration, rod cells being most numerous.
C. Nerve cells, invaded by glia cell, and showing chromatolysis.

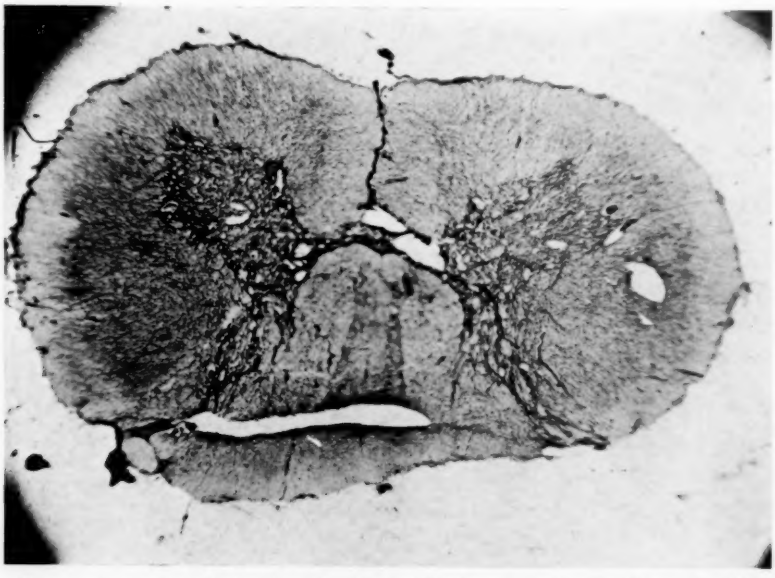


FIG. 6.—Cord: Cervical region showing cavities in grey and extending into white matter. See Fig. 9.

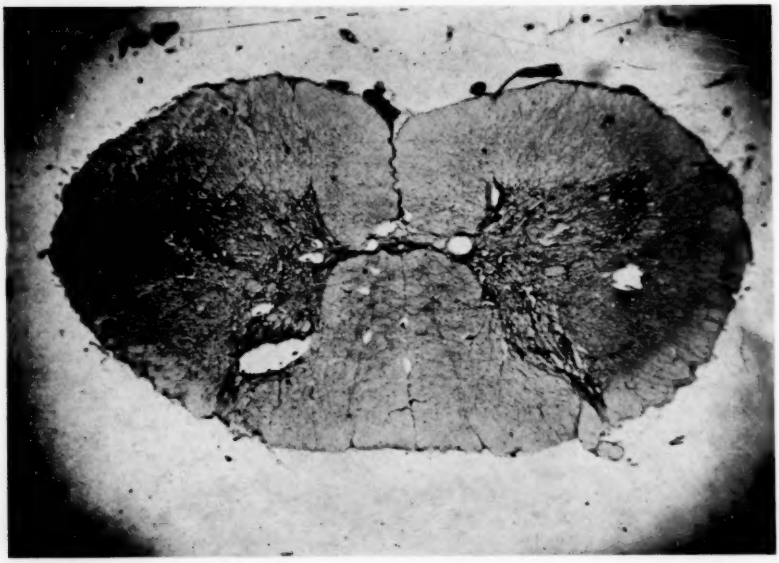


FIG. 7.—Cord: Cavities mostly confined to grey matter. Note cavity in posterior horn and compare with FIG. 11.

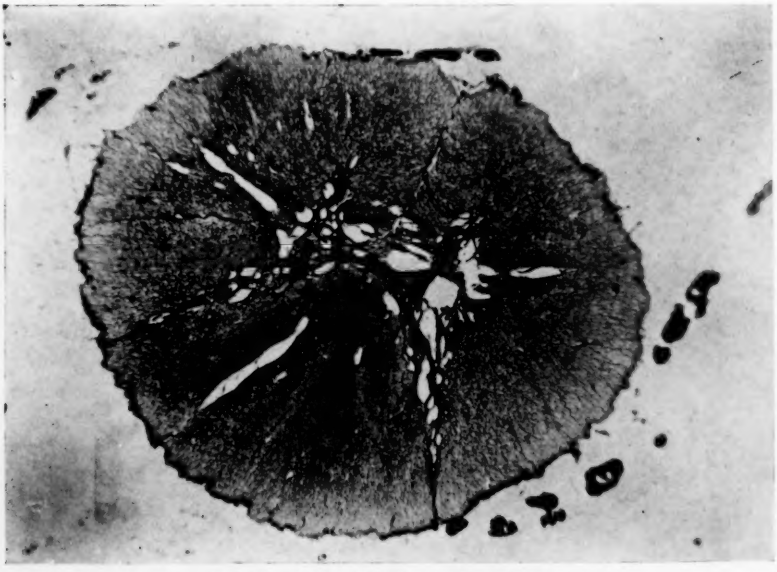


FIG. 8.—Cord: Showing cavity formation.

FIG. 9.—Part of large cavity shown in Fig. 7. Homogeneous degeneration about cavity in white matter.

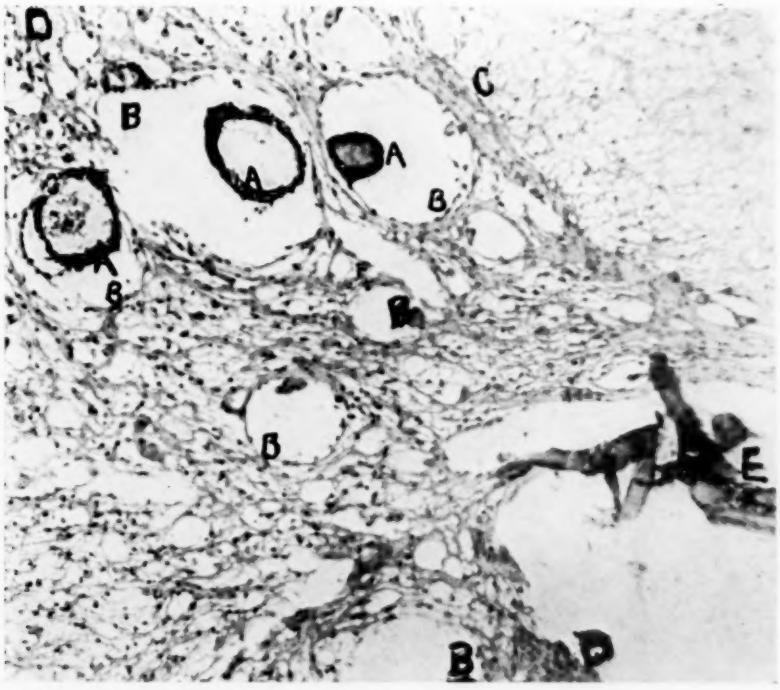



FIG. 10.—A. Virchow Robin spaces of vessels infiltrated.
B. Receding of tissue from vessels.
C. Homogeneous appearance of grey matter.
D. Cellular infiltration grey matter.
E. Coalescing cavities and tissue debris with cavity extending into white matter of anterior columns.

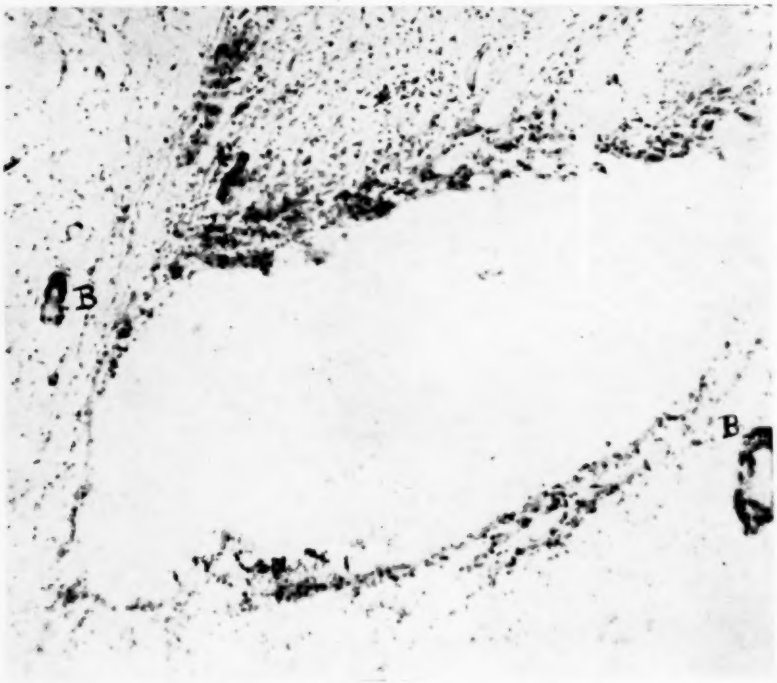



FIG. 11.—Cavity, posterior horn, grey matter. Note cellular infiltration about same. B. Cellular infiltration around vessels.

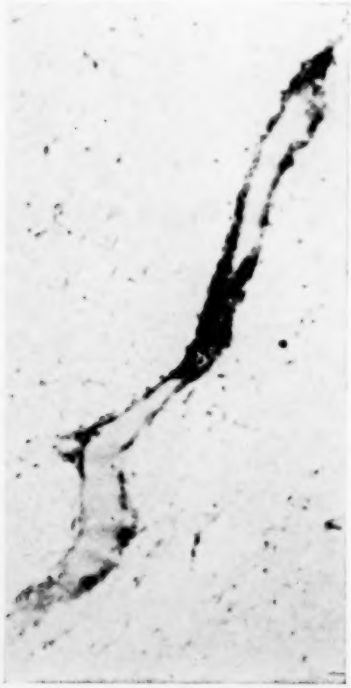


FIG. 12.—Vein cut lengthwise (cord) showing cellular infiltration.

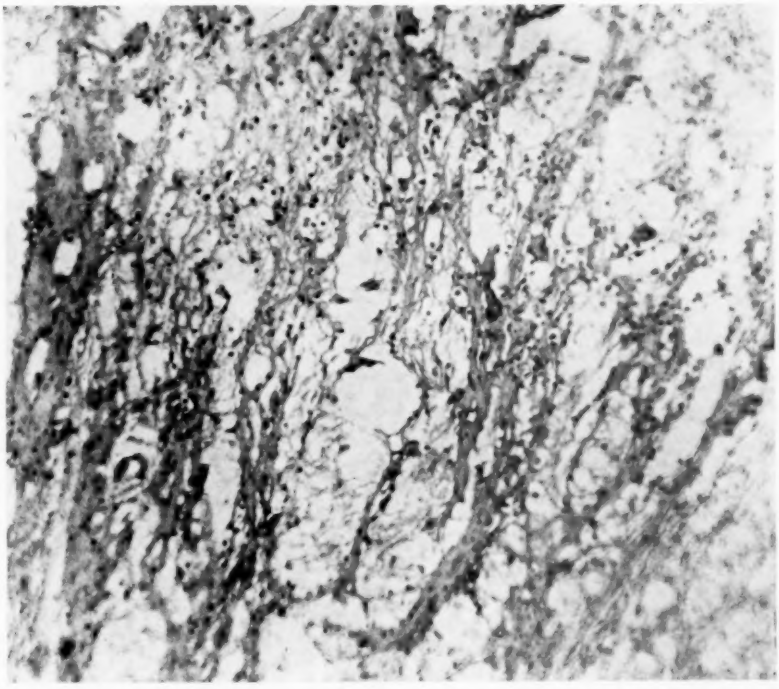


FIG. 13.—Cellular infiltration posterior horn grey matter—homogeneous appearance extending into grey matter. Distended spaces—or cavities.

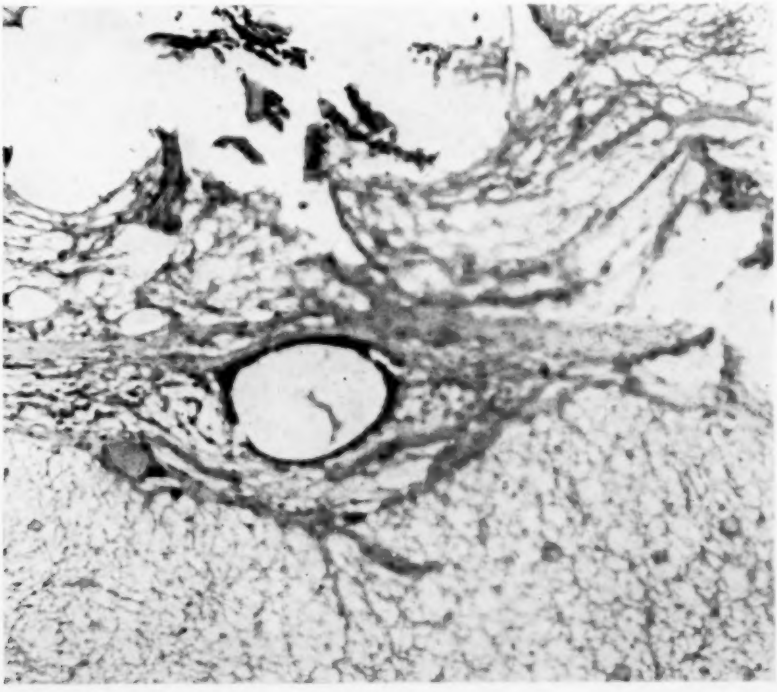


FIG. 14.—Distended central canal. Homogeneous appearance of grey matter of commissure.

# Notes and Comment.

THE OREGON SURVEY OF MENTAL DEFECT, DELINQUENCY AND DEPENDENCY.—The survey conducted in Oregon in 1920 by the University of Oregon and under the direction of the United States Public Health Service was unique in several particulars. In the first place it appears to have had its inception in an unusually intelligent and widespread interest on the part of the citizens of the state in the matter of promoting and conserving the public health. The state legislature at its 1918 session passed a joint resolution which enacted that: "The University of Oregon is hereby granted authority to make such survey, and . . . . to report the results of its study with recommended legislation to the next regular legislative assembly, with the understanding that . . . . the state will be asked for more appropriations for that purpose."

The University of Oregon having thus been granted authority under which a survey could be undertaken invited the United States Public Health Service to act as director of the survey. This invitation was also endorsed by the State Board of Health of Oregon. The invitation was accepted and Dr. Chester L. Carlisle detailed as director of the survey.

No funds were available and the legislature had specifically stipulated that no appropriation was to be asked for in carrying out the survey. In this emergency the director decided to enlist the aid of every public spirited citizen in gathering the information. A certificate or commission was prepared which bore, by consent of the governor the seal of the state—and which was signed by Dr. Carlisle as director of the survey. This commission was sent to over ten thousand citizens of the State; physicians, lawyers, clergymen, judges, nurses and teachers and to citizens known to be interested in community welfare. Every state, county, city and village official was asked to accept a commission as well as members of social welfare and philanthropic organizations or groups and the local chapters and branches of the American Red Cross. In this way the director was able to enlist a large and intelligent corps of assistants and the Oregon survey is also unique in the field of mental hygiene by reason of the fact that it was carried on without federal, state or private appropriations wholly by the voluntary cooperation of thousands of citizens who had become interested in the welfare of their community and state.

The commission sent out recites that: "Reposing special confidence in the discernment, integrity and patriotism of ——— ——— he is requested to act as Special Voluntary Assistant to the

State Survey of Mental Defect, Delinquency and Dependency, serving without remuneration from a high sense of citizenship and patriotism, in accordance with Senate Joint Resolution No. 28." This resolution, a portion of which has been quoted, then follows in full on the commission, following which are instructions concerning the headquarters of the survey and the procuring of record cards or blanks to be used in gathering data.

These cards were so arranged by the director as to take care of any combination of medico-psychological-sociological conditions or symptoms which might be found in any one individual.

A summary of the survey is published in the *University of Oregon Extension Monitor,* Eugene, Oregon, April-May, 1921, and this publication contains also a copy of the card used for making records and of the commission sent out to those whose aid was desired in making the survey.

Unfortunately funds were not available for publishing all the data collected, but every card and manuscript is on file in the University of Oregon and the summaries contained in the *Monitor* will give the reader a very excellent grasp of the scope and results of the undertaking.

One thing stands out most distinctly and it is one which will in the future prove of inestimable value to the state in any effort which shall be made to put into effect the recommendations of the director.

Over ten thousand citizens of the state have had a personal insight into the care of the insane, the mentally defective, the training and education of backward children, the care of delinquents and dependents, the conduct of state institutions and of county almshouses, and the cost *per capita* to the citizens of the state for all these medico-sociological activities. These individuals have had brought home to them as never before the answer to the world-old question, " Am I my brother's keeper? " and have learned how well sometimes, how very badly often, that brother is cared for.

A small army has been recruited in social service and we believe the state has gained as much in this direction as it has in the way of learning what problems of mental defect, delinquency and dependency confront it.

It has found out what these problems are, how far the state or local communities have progressed in meeting or solving them, but, and of far-reaching importance, it has throughout the community a large number of people who will not rest content until the very

wise recommendations of the director under whom they have worked are put into effect.

We congratulate the state and its university and the Public Health Service and its very efficient representative, Dr. Carlisle, upon establishing a precedent in surveys of this kind which may well be followed by other communities.

As in all surveys of this kind it was soon discovered that the medical men of the state had little real knowledge of matters psychiatric with practically no training and naturally no interest in mental disorders or defects. The University of Oregon has recognized its responsibility in the matter and courses in psychiatric medicine are soon to be established which will be on a par with other medical courses in the university.

THE CENTENARY OF THE THESIS OF BAYLE.—We have already noted in these pages (January, 1922) that the League of Mental Hygiene of France has appointed a commission to organize a Congress of Mental Hygiene to be held in Paris in connection with the celebration of the Centenary of Bayle's description in 1822 of General Paralysis.

We are now informed that the three societies of mental medicine in Paris have decided to organize in Paris in May a psychiatric reunion to commemorate Bayle's publication in 1822 of the first detailed description of the condition known as general paralysis. These societies are The Medico-Psychological Society, The Psychiatric Society and The Clinical Society of Mental Medicine.

It has been decided to take advantage of the presence in Paris of a large number of physicians to take part in an important convention of the Medico-Psychological Society of Paris and the Association of the Alienists of France on May 29, and hold the Centenary Celebration on the following days, the 30th and 31st of May. Under the presidency of Dr. Toulouse two sessions have been arranged to discuss the history as well as the actual conception of general parlysis or as it has been termed "la Maladie de Bayle."

The subjects assigned in the program of these two days will fix the limitations of discussions and of such voluntary communications as may be presented.

The reunion is open to neuro-psychiatrists of countries which are friends or allies of France.

The fee of the reunion has been fixed at 40 francs. Neuro-psychiatrists who propose to take part should send their names with

this fee to M. Raymond Mallet, treasurer, 284 Boulevard St. Germain, Paris.

The program as arranged is as follows:

PREMIÈRE JOURNÉE: HISTORIQUE.

1re Séance (matin 9 h, 1/2):

Discours du Président;

*Les Précurseurs de Bayle*, par MM. Laignel-Lavastine et Vinchon;

*Bayle et les Travaux de Charenton*, par M. Semelaigne.

2e Séance (après-midi 2 h. 1/2):

*La Paralysie générale après Bayle.—La dualité de la Paralysie générale. La Folie paralytique, la Démence paralytique. Les Travaux de la Salpétrière*, par M. Arnaud.

DEUXIÈME JOURNÉE: LES CONCEPTIONS ACTUELLES DE LA PARALYSIE GÉNÉRALE.

3e Séance (matin 9 h. 1/2):

*Etiologie*, par M. Pagtet;

*Anatomie pathologique*, par M. Lhermitte;

*Etude Clinique et Médico-légale*, par René Charpentier.

4e Séance (après-midi, 2 h. 1/2):

Traitement et Assistance, par M. Truelle.

The Congress under the auspices of the League of Mental Hygiene of France will be held June 1-4, 1922, in Paris and will also be presided over by Dr. Toulouse. The subjects selected for discussion and the names of those who are to open the discussions are:

The General Principles Which Should Govern the Care of Psychopathics. Dr. Antheaume (Paris).

The Relation of Mental Hygiene to the Selection of Workers. M. Lahy (Paris).

Applied Psychology and the Methods of Education. Professor Claparède (Geneva).

International Cooperation in Scientific Studies in Mental Hygiene. Professor Rabaud (Paris).

Mental Hygiene in the Family. Dr. Toulouse (Paris).

Those who propose to participate in the Congress should send in their names to the Secretary, Dr. Antheaume, 1 Rue Cabanis, Paris (XIV), accompanied by the fee of 25 francs payable to the Treasurer, Dr. Dupain, at the same address. Those who desire to become supporters of the movement will be enrolled as *membres adhérents* upon sending their names and the fee of 10 francs to the same address.

This Congress will serve in France as a preface to an International Congress of Mental Hygiene to be held ultimately in the United States for the promotion of which we believe a committee has been formed in New York.

## Association and Hospital Notes and News.

THE SEVENTY-EIGHTH ANNUAL MEETING OF THE AMERICAN PSYCHIATRIC ASSOCIATION.—The meeting of the Association for 1922 will be held in Quebec on June 6, 7, 8, 9, at the Chateau Frontenac, under the presidency of Dr. Albert M. Barrett, of Ann Arbor, Michigan, Professor of Psychiatry in the Medical School of the University of Michigan and Director of the State Psychopathic Hospital.

Quebec has many and varied attractions for the visitor. Its position and surroundings are most picturesque, and the city and its environs offer to the visitor points of interest to be found nowhere else in America. Historically the old city is full of story and we suggest to our readers to take down Parkman's works from their library shelves and obtain from "Count Frontenac and New France under Louis XIV" an insight into the early history of French Canada, and the labors, trials and privations of the men who strove to establish French dominion in the New World.

They will get a conception of Quebec in those far off days which it will not be difficult to link with the city as it is to-day, and they will go to Quebec better prepared to enjoy their visit to the fullest extent.

The words of Frontenac, who wrote, "I never saw anything more superb than the position of this town. It could not be better situated as the future capital of a great empire," will find a ready echo in their minds. The great empire which France hoped to establish in Canada was never to be realized but the language of its would-be founders still survives, as well as many of their customs, making Quebec in many ways an old-world town.

The Committee of Arrangements, under the able leadership of its Chairman, Dr. Francis E. Devlin, is doing everything to promote the success of the meeting and the pleasure of those who attend. We urge every member to be present who is able and predict that all who attend will be well repaid for the time and expense involved.

The Secretary, Dr. Haviland, has issued a preliminary program as follows:

TUESDAY, JUNE 6, 10 A. M.

Organization
Invocation
Addresses of Welcome and Responses
Reports: Committees—Council—Treasurer—Editor of JOURNAL OF PSYCHIATRY
Appointment of Nominating Committee
Memorial Notices
President's Address

TUESDAY, JUNE 6, AFTERNOON.

Administrative and State Problems

Special papers will be presented discussing the manner in which Canada and the United States are dealing with the problems presented by mental cases among ex-service men.

TUESDAY, JUNE 6, EVENING.

Administrative and General Topics

Among the topics to be discussed may be mentioned: Personality, Classification, and The Relation Between Psychologists and Psychiatrists.

WEDNESDAY, JUNE 7, FORENOON.

Clinical Psychiatry

This session will be devoted to papers treating of various aspects of the psychoneuroses.

WEDNESDAY, JUNE 7, AFTERNOON.

Clinical Psychiatry

The papers of this session will deal with the relation of the endocrine glands to psychoses.

The session will be a short one, as a reception at the Government House is planned for the latter part of the afternoon.

WEDNESDAY, JUNE 7, EVENING.

Annual Address by Dr. Walter B. Cannon, of Harvard University
President's Reception

THURSDAY, JUNE 8, FORENOON.

Clinical Psychiatry

The papers of this session will deal chiefly with the relations between bodily conditions, including focal infections, and mental states.

THURSDAY, JUNE 8, AFTERNOON.

Clinical Psychiatry

Papers will be presented, dealing with varied psychiatric topics, including Children and Delinquency, and Treatment, with especial reference to treatment in neurosyphilis.

This session will be a short one, as a trip on the St. Lawrence River is planned for the latter part of the afternoon.

THURSDAY, JUNE 8, EVENING.

Round Table Conferences

(1) Administration
(2) Clinical Psychiatry
(3) Nursing
(4) Laboratory Work
(5) Occupational Therapy

Participation in the dinner conferences will be arranged as in former years.

FRIDAY, JUNE 9, FORENOON.

An interesting session on varied and important topics is planned. It is hoped that all who attend the meeting of the Association will plan to stay through this session.

PRELIMINARY LIST OF READERS.

| | | |
|---|---|---|
| George S. Amsden | William Healy | A. J. Rosanoff |
| Earl D. Bond | Thomas J. Heldt | Harry C. Solomon |
| Wm. A. Bryan | Theodore A. Hoch | Henry R. Stedman |
| C. Macfie Campbell | Robert A. Keilty | Wm. Barclay Terhune |
| Chester L. Carlisle | Nicholas Kopeloff | Beverly R. Tucker |
| E. H. Cohoon | Helge Lundholm | F. Lyman Wells |
| Henry A. Cotton | Daniel C. Main | John C. Whitehorn |
| Richard Dewey | Karl A. Menninger | Harold W. Wright |
| Clarence B. Farrar | Abraham Myerson | Otto G. Wiedman |
| Alfred Gordon | Harlan L. Paine | Tom A. Williams |
| Harold I. Gosline | Harold A. Patterson | John I. Wiseman |
| Phyllis Greenacre | James S. Plant | |

While the Hotel Chateau Frontenac has an ample number of double rooms, the number of single rooms is limited, and those members desiring single rooms should at once communicate with Dr. Francis E. Devlin, Hospital St. Jean de Dieu, Gamelin, Quebec, Chairman Committee on Arrangements, as it will probably be necessary to make such reservations at other hotels.

This preliminary program will be followed in May by the completed program with titles of papers and names of authors.

The change in the constitution whereby members now receive the AMERICAN JOURNAL OF PSYCHIATRY has apparently met with much favor. It should result in an increased number of applications for membership and members are urged to secure as many desirable applications as possible from among their associates, that the Association may continue representative of American psychiatry. The Secretary will be pleased to forward application blanks on request.

A considerable number of hotel reservations for the meeting have already been made, and there is every indication of a large attendance. The Committee of Arrangements, composed of Canadian members, is making every effort to assure the success of the meeting, and the plans the Committee has already formulated indicate that the Seventy-eighth Annual Meeting will be a memorable one.

The Committee on Arrangements has planned special entertainment features for the ladies accompanying members to the meeting, including a trip to the famous Shrine of St. Ann de Beaupré and a trip to the Montmorency Falls.

Attention is invited to the fact that not only is Quebec the most historic and picturesque city of Canada, but that it is the point of embarkation for the famous Saguenay River trip, which many members are planning to take after the meeting.

The Secretary will appreciate any information as to changes of address, it being essential to keep an accurate list of addresses, that members may promptly receive the JOURNAL OF PSYCHIATRY.

It will be noted from the above that the government is interesting itself in the success of the meeting and that among other things a reception is to be given the members of the Association at the Government House on the afternoon of Wednesday, June 7.

AN APPEAL ON BEHALF OF THE SECRETARY-TREASURER.—Dr. Haviland has requested us to again remind members of the Association who have not paid their dues that he is anxious to hear from them. The treasury this year has had to meet unusual demands. It has been necessary to pay for the 1920 volume of Transactions and at the same time pay for the subscription of each member for THE AMERICAN JOURNAL OF PSYCHIATRY. Each member has received the numbers of the JOURNAL as they have been issued and should feel in duty bound to pay their dues, not only to pay for what has been received, but to help meet the other and necessary expenses of the Association.

We heard the treasurer of an organization say recently that from one point of view it was successful and prosperous, because

it had developed a large leisure class, but that from another point of view, that of paying its bills, it was not successful, as the leisure class was so called, because it was leisurely in paying its dues.

We trust our Association is successful, indeed we know it is, and we hope that its members may be so prosperous as to attain membership in the so-called leisure class—but we are sure no member wishes to be placed in that class simply because he pays his dues at his leisure and not as soon as the treasurer's bill is received.

We feel confident that the delay in payment has, in the majority of instances, been through inadvertence, but this inadvertence on the part of a surprisingly large numbers has placed the treasurer in an embarrassing position which these careless individuals should be prompt to relieve.

# Book Reviews.

*Psychanalysis, Its Theories and Practical Application.* By A. A. Brill, Ph. B., M. D., 3d Edition. (*Philadelphia and London: W. B. Saunders Co., 1922.*)

Dr. Brill's well-known book on "Psychanalysis" has appeared in its third edition with several important additional chapters and a new preface. The first edition, published in 1913, contained 325 pages. The present edition contains 408, which gives a fair idea of the amount of new or revised material included in the book in its present form. Dr. Brill's "Psychanalysis" is so familiar to all psychiatrists that a detailed description of it seems unnecessary. Summarily, one may classify it as a successful effort to present to the American reader the Freudian theories of psychobiology and those methods of psychoanalytic treatment, which have been elaborated by Freud and his followers during the past 15 years. To those psychiatrists, who are unable to read Freud in the original German text, Dr. Brill's book is indispensable, if they have an honest desire to know what Freud and his disciples teach and practice. Whether one be a "Freudian" in the stricter sense of that term or not, the fact remains that modern psychiatry without Freud is as unthinkable as anatomy and biology would be to-day if Charles Darwin had never written his book on "The Origin of Species." How we happen to react personally to the Freudian concepts of psychobiology is a matter of secondary importance. We must accept Freud, if not as an absolutely sure guide, at least as a kind of scientific Moses, who has succeeded in reaching a new eminence of psychiatric thought—an undiscovered Pisgah, from which his far seeing vision has been able to descry the entire domain of man's mental reactions and has there viewed them all from an entirely new standpoint. Of course, there may be other mountains, much higher than Professor Freud's own Pisgah, and from which a still better and a still clearer vision may be obtained. No one, however, will ever be able to refuse to Professor Freud his rights to his own particular mountain and to his own particular outlook. On this account, any book that can give in fairly simple and clear language the fundamental concepts of Freud's teaching is valuable always. This, Dr. Brill has faithfully tried to do. He must have succeeded—for his book has become almost a text book on "Psychanalysis." One sees it on the desks of young psychiatrists, of almost every new interne in a psychiatric clinic, and one finds it also on the shelves of intelligent laymen, who are interested in mental hygiene and in the modern aspects of mental science. It is, therefore, unnecessary for a reviewer to take up in detail the various chapters of Dr. Brill's work; his

discussion of the Psychoneuroses, of Dreams, of the Psychopathology of Everyday Life, of the Oedipus Complex and of Hysterical Fancies. It is, however, fitting that some reference should be made here to the new material that appears for the first time in the third edition that lies before us.

Before discussing this new material and in order to avoid misunderstandings, it may be well to state in clear terms exactly what those duties are which the reviewer believes should be fulfilled by a psychiatrist, who is asked to pass judgment on the work of a colleague. Surely the author of such a work will not seek in the unprejudiced reviews of his book mere fulsome adulation and indiscriminate praise any more than he will expect an ultra-conservative refusal to consider any of his ideas or a downright and unjust abuse. Whoever has had the misfortune to write a book himself, knows only too well how easily mistakes slip by him and how often he fails to see some clumsiness of expression or some break in the chain of his reasoning, even though he has read his proofsheets with care and has imagined that he has corrected all possible mistakes. It is the part of the reviewer, not in a spirit of carping criticism but rather with the kindly interest of a friend, to point out such errors. He does so, not because he loves to find fault, but because he considers the book before him a valuable one and is anxious that it should contain nothing that might be criticized with some show of justice by those who are determined to misunderstand, or who have not themselves sufficient mental ability to appreciate it.

It is in this spirit that the reviewer calls attention to a certain lack of clearness, that often amounts to awkwardness in Dr. Brill's English style. "Medical English" is often a grammatical law unto itself, and those medical writers are few and far between, who are able to use the English language clearly, forcibly and without awkward phraseology. In Dr. Brill's preface to the third edition, he speaks of "a lack of understanding of psychosexual problems, a knowledge of which is *predisposed* in all students of Psychoanalysis." Just what Dr. Brill means by "predisposed" is not clear. He wishes to say, I suppose, that "a knowledge of psychosexual problems should be taken for granted as a '*sine qua non*' of successful psychoanalytical treatment among physicians who practice Psychanalysis." There are many other similar misuses, or awkward uses, of single words, such as the persistent use of the verb "evince." More frequently still, one finds a clumsiness of expression that grates on the ear. These roughnesses of style cannot be described in detail. Let one sentence suffice; a sentence which those conservative teachers who, in the days of our youth, strove to teach undergraduates the use of their mother tongue, would have held up to the attention of their classes as an awkward torturing of the King's English. Dr. Brill says on page 21, "We all know that an insult retaliated leaves quite a different impression than one that has to be swallowed."

However, these are petty faults that hardly deserve mention. One wonders, nevertheless, whether the spoken word of Dr. Brill's native country were English or whether it may not have been some other form of human speech. He says, "I think in English" (p. 50). If this means that he was

born in an English-speaking community, it is hard to understand some of his grammatical constructions, which suggest a mind that thinks unconsciously in some other language. No one knows better than the reviewer how one's native tongue clings persistently to all one's efforts to express oneself in any other, especially in writing it. A man may live in a foreign country almost all his life and may speak the tongue of that country for years, may write in it and think in it, but his written style will occasionally and infallibly betray the fact that the language in which he writes is not the language of his childhood. Nothing betrays such a fact so clearly as the use of prepositions. And therefore, one sometimes finds that a psychiatrist is unjustly accused by his critics of writing inaccurate and puzzling English simply because the author is using a language which is not his own by birth and early association.

In Dr. Brill's book there is also, now and then, a suggestion that he has changed his mind about certain matters, or rather that his conception of them has developed. This appears in certain contradictions between statements in the original part of the book and statements contained in the newly added chapters. For instance, on page 27, Dr. Brill speaks of masturbation and of homosexuality as "perversions." In his new chapters on "Masturbation" and on "Homosexuality," he is at great pains to prove that both of these sexual reactions are not perversions at all.

This brings us by a natural transition to the two new, most important chapters; namely, Chapter 5, "Masturbation, Its Relation to the Neuroses and Psychoses," and Chapter 11, "Homosexuality." There is also another new chapter on "Paraphrenia" which, however, does not contain any material that suggests criticism. The chapter on masturbation is sane and satisfactory. If printed by itself, as a pamphlet, it would be very valuable and could be placed in the hands of many men, who are tormenting themselves with worries connected with the autoerotic habits of their youth. This is the most satisfactory chapter in the entire book. The chapter on "Homosexuality" is also well written. Indeed the three new chapters show a much clearer and a much more concise English style than the rest of the book; and they mark a decided advance in Dr. Brill's powers of objective statement. Chapter 11, however, contains one statement that should not appear in the pages of an author, who lays claim to sound historical knowledge. On page 296, Dr. Brill says, in speaking of homosexuality among the Greeks, "With the Greeks, who numbered among their inverts some of the most manly men, it was surely not the masculine traits of the boy that attracted them, but rather his physical resemblance to the woman, as well as his feminine psychic qualities." This is a fundamental misconception of Greek psychology. Nowadays there is really no excuse for not knowing the Greek and Latin Classics. These are the days of "The Loeb Classical Library," which places within the reach of everyone, complete and unexpurgated editions of classical authors with the Greek or Latin texts on the one side of the page and an excellent English translation on the other. Dr. Brill may be referred first of all to the dialogue of Lucian, called

"Amores," in which a heterosexual and a homosexual lover discuss with one another the reasons why each one prefers his own type of sexual satisfaction. Here Dr. Brill will discover that the homosexual lover places all his emphasis on certain boyish characteristics of body and mind, which the woman does not and never could possess. The attraction of the boy or the youth is a definitely *masculine* thing. More important still is the 12th book of the Greek Anthology, Stratos "Musa Puerilis." I would especially recommend to Dr. Brill the seventh epigram of this book in which the different characteristics of the youthful male are compared with those of the female. The author states very distinctly that the things which attracted the Greek were definite masculine characteristics, both physical and mental, which could never by any possibility be found even in the most masculine of females. The Roman standpoint, which is essentially the same as the Greek, is well stated in several epigrams of Martial. (See especially Book XI, Epigram 43.) It is, therefore, a complete misunderstanding of Greek sex reactions to state, as Brill does, that the Greek was attracted to the feminine traits in youthful males. I am not sufficiently well informed about this type of homosexual activity in modern days to be able to say definitely that the modern homosexual differs in his reactions from his Greek brother. I do not think it likely. Dr. Brill's statement, therefore, may lead to a serious misconception of those psychobiological reactions which lie at the foundation of one important type of sexual temperament.

As for Dr. Brill's concept of the manner in which homosexuality develops, I cannot help feeling that the entire explanation is too forced to be acceptable. According to Brill, the petted male child is first sexually attracted to his too-devoted mother. He then identifies himself with her, falls in love with his own body and after passing through a period of narcissism, finds sexual satisfaction only in a love object that has the same type of body as he himself. This appears to me very roundabout and fantastical. Personally, I have never found any mental facts that would tend to prove it in my examination of the few homosexuals among my patients. It seems much simpler to me to accept a congenital homosexuality, and to let it go at that.

Dr. Brill's book ends with a glossary in which he gives definitions of a number of medical terms that might possibly puzzle the layman. This glossary suggests that Dr. Brill intends his book for wide circulation among people, who are not trained in psychiatry. Inasmuch as he himself complains of the dangers to psychanalysis that arise from the so-called "Wild Psychoanalysts," it seems somewhat startling that he should take the trouble to make his book more easily comprehended by exactly that class of untrained men, whose activity he deplores. The glossary itself is peculiar; especially for the briefness with which it defines important psychiatric terms. For instance, "Dementia Præcox: a form of insanity"; and then "Schizophrenia: see Dementia Præcox." The definition of "Libido" merely is "sexual craving" surely not the meaning which Freud himself would attach to the word. Some of the other definitions are almost less clear than the word which they seek to define. For instance "Erogenous Zone: an

organ which if stimulated bestows on the impulse a sexual character." What impulse?

It is also somewhat startling to find that in the preface of the second edition, Dr. Brill mentions Professor Adolf Meyer among a group of "men of scientific eminence and sound judgment who have given assent to the chief of Freud's conclusions." To the uninitiated, this statement classes Professor Meyer with such extreme psychoanalysts as Jung. This may not be entirely a case of finding "Saul among the Prophets," but it surely does not give a fair or an adequate idea of Professor Meyer's attitude towards the most advanced representatives of the Freudian School. It is true that Dr. Brill puts in quotation marks the beginning of the sentence that contains Dr. Meyer's name, but there are no other quotation marks to show us where the quotation ends and where Dr. Brill's own words begin.

These criticisms are of course all minor details, which do not in any way deeply affect the value of Dr. Brill's book and its permanent usefulness.

JOHN R. OLIVER.

*Medizinische Psychologie. Ein Leitfaden für Studium und Praxis.* Von DR. ERNEST KRETSCHNER. (*Leipzig: Georg Thieme, 1922.*)

This is an advanced manual, which assumes acquaintance with the fundamentals of psychiatry, but is not unassimilable without them. It is perhaps the best balanced book that has appeared in its field. Bleuler's influence is marked. As there is no really standard way of presenting the subject, the viewpoint necessarily has original features; where other authorities are used, an excellent sense of values is manifest. The book is not easy reading, being quite condensed. A competent and liberally annotated translation would be a genuine service to American psychopathology; probably a labor of love also, the popular sense being attuned to somewhat more highly colored productions.

F. L. W.

*An Essay on the Physiology of Mind.* By FRANCIS X. DERCUM, M. D., etc. (*Philadelphia and London: W. B. Saunders Co., 1922.*)

This brief volume is a *résumé*, and in part also *rechauffé* of its distinguished author's conceptions on the mechanics of mental functions. The earlier portion reviews generally understood facts of the biogenesis of the nervous system. In accounting for the more complicated mental processes of the higher organisms use is made of hypotheses involving amœboid movements of the nerve cells. The psychogenic repressions of the Freudian type become resistances of a more mechanical conception, thus, ". . . . the retraction of the dendrites and axones of the neurones explains the palsies and anæsthesias of hysteria" (p. 176). More importance is attached to this hypothesis than is usual among students of neurology, but the manner of presentation is clear and stimulating, as one would expect.

F. L. W.

*Fourth Annual Report of the Massachusetts Commission on Mental Diseases of the Commonwealth of Massachusetts for the Year ending November 30, 1919.*

This report summarizes the activities of the Massachusetts state hospitals and is interesting the ramifications of its service. There are numerous interesting details, perhaps the most interesting being a decrease of 85 in the total number of patients under care as compared with an increase of 89 during the previous year. The interesting biennial conference reports which have been a feature of previous volumes are not included and it is surmised that they were not held.

W. R. D.

*State of Iowa, 1920, Twelfth Biennial Report of the Board of Control of State Institutions for the Period ending June 30, 1920. (Des Moines: Published by the State of Iowa.)*

Beyond the many statistics in this book there is little of interest. It can easily be seen that the Board of Control is active and that Iowa's institutions are kept on a high plane of usefulness.

*Bulletin of Iowa Institutions, Vol. xxii, 1920. (The Reformatory Press, Anamosa, Iowa.)*

In addition to the minutes of the quarterly conferences, there are a number of interesting papers. Mechanically, the volume is a credit to the Reformatory Press.

*Transactions of the College of Physicians of Philadelphia. Third Series, Volume the Forty-second. (Philadelphia: Printed for the College, 1920.)*

This volume is larger than usual containing over 500 pages. There are forty-two addresses or papers with a number of section reports and other matter. There are no papers of special neurological or psychiatric interest but many of a wider field. Sir William Osler and H. C. Wood are the subject of a number of addresses made at memorial meetings. A list of the meetings held would be an addition to the book.

*Proceedings of the Fifteenth Annual Meeting of the Association of Life Insurance Presidents, Held in Hotel Astor, New York, N. Y., December 8 and 9, 1921.*

Naturally, the greater parts of the addresses contained in this book are of technical interest but an address by Livingston Farrand entitled Health the Guidepost to Material and Moral National Strength, and by Robert Lynn Cox entitled National Health in the Life Insurance Mirror should interest all medical men.

# Obituary.

## DR. PEARCE BAILEY.

Dr. Pearce Bailey, who died of pneumonia in New York City on February 11, 1922, was born in New York, July 12, 1865. He was graduated from Princeton in 1886 and from the medical department of Columbia University in 1889. Following his graduation from Columbia he studied abroad, mostly in France, and on returning entered the field of neurology. His early interest was in organic neurology and neuropathology. In 1898 he published *Accident and Injury: Their Relation to Disease of the Nervous System.* He was adjunct professor of neurology at Columbia from 1906 to 1910 and consulting neurologist at St. Luke's, Roosevelt, New York, Orthopædic, Manhattan State, and St. John's hospitals. He served as president of the American Neurological Association during 1913, and as president of the New York Neurological Society from 1903 to 1905. He was a member of the American Medical Association, the American Psychiatric Association, the New York Pathological Society, the New York Academy of Medicine, and a director of the National Committee for Mental Hygiene. He was one of the founders of the New York Neurological Institute and served for a number of years as chief of one of the sections.

In the spring of 1917, Dr. Bailey, with Dr. Stewart Paton and Dr. Thomas W. Salmon, was requested by the Surgeon General of the Army to make a trip of inspection to the Mexican Border, where troops were then mobilized, to study the facilities of the army for the care of nervous and mental patients. The facilities were found not to be adequate and the Surgeon General requested the National Committee for Mental Hygiene to draw up proper plans for this branch of the army medical work and to organize neuropsychiatric units for the military hospitals. A special committee, known as the Committee to Furnish Neuropsychiatric Units to Base and Other Military Hospitals and later as the

War Work Committee was appointed by the President of the National Committee and Dr. Bailey was asked to serve as its chairman. Under his chairmanship plans, including equipment, for special neuropsychiatric wards in base and general hospitals were prepared; methods for the neuropsychiatric examination of the army personnel, for the purpose of eliminating those nervously and mentally unfit, were drawn up; the preparation of special army psychological tests assisted; a personnel of psychiatrists and neurologists recruited, including a specially trained nursing and attendant personnel; and five graduate schools of neuropsychiatry organized for the further training of medical officers.

At the request of the surgeon general Dr. Bailey accepted a commission as a major in the medical corps of the army and in July, 1917, reported in Washington to organize in the Office of the Surgeon General the Division of Neurology, Psychiatry and Psychology. (The Psychological Section was later made an independent division.) Promotion to lieutenant-colonel and to colonel followed. He served as chief of the new division until his discharge in February, 1919. In 1918 he spent three months in France on a trip of inspection. The most outstanding achievement of his work as chief of the Division of Neurology and Psychiatry, aside from the successful carrying through of the plans already indicated, was the incorporation of the post of Division Psychiatrist in the tables of organization of the army. The creation of this post was of the greatest significance in that it assured to each army division a psychiatric chief who was responsible for the mental and nervous health of the men in his division; while in the United States, the elimination of the unfit was under his supervision and in the A. E. F. the organization of facilities for the immediate treatment of those who developed neuroses. For this services during the war Dr. Bailey was granted a Distinguished Service Medal.

On completing his work in the army, Dr. Bailey was invited by the governor of New York to accept the chairmanship of the State Commission on Mental Defectives. Long familiar with the clinical aspects of mental deficiency, Dr. Bailey had become, while in the army, impressed with the importance of mental deficiency as a social problem. He accepted the chairmanship. With his usual perspicacity he saw his problem as a series of problems and

while attempting to coordinate them all, selected those that to him seemed of most immediate importance and with his quiet energy set about to solve them. In his thinking he at once separated the non-delinquent from the delinquent mental defective. For the former, he encouraged special education, either in ungraded classes of the public schools or in institutions, and supervision in the community after completion of the school work. He was particularly interested in the possibilities of supervised colonies from the state schools for the mentally defective. For the latter—the delinquent mental defective—he created at Napanoch a special institution, the first institution for defective delinquents in this country.

Dr. Bailey had long been interested in the problem of the "different" or "odd" child and particularly the problems of such children as they pass through adolescence. Although facilities exist for the care and training of the defective child and of the child who is definitely ill, either of physical or nervous disease, but little attention has been given to the supposedly "normal" child who is merely queer or difficult; he has rather been supposed to outgrow these difficulties and to take his place and compete with his fellows. Dr. Bailey's clinical experience had made him less sanguine of the later success of these children and he believed that the nervous illnesses from which they came to suffer in their effort to adjust themselves in an adult world or the mediocrity and lowered social efficiency into which they slipped could in part be prevented by a proper study and understanding and adjustment of the child during its adolescence. To this end, therefore, he established in 1920, in connection with the Neurological Institute, a clinic of very great possibilities, which he chose to call the Classification Clinic.

Of recent years Dr. Bailey wrote mostly on medico-social topics. Some of his more important contributions along this line have been *Applicability of the Findings of the Neuropsychiatric Examinations in the Army to Civil Problems* (*Mental Hygiene,* April, 1920); *Care and Disposition of the Military Insane* (*Mental Hygiene,* July, 1918); *Care of Disabled Returned Soldiers* (*Mental Hygiene,* July, 1917); *Mental Deficiency; Its Frequency and Characteristics in the United States as determined by the Examination of Recruits* (*Mental Hygiene,* July, 1920); *Malingering in U. S. Troops, Home Forces, 1917* (*The Military Surgeon,*

March, April, 1918); *Neuropsychiatry and the Mobilization* (*New York Medical Journal,* April 27, 1918); *Prevention of Nervous Casualties* (*New Republic,* January 5, 1918); *Psychiatry and the Army* (*Harper's Magazine,* July, 1917); *War's Big Lesson in Mental and Nervous Diseases* (*New York Times,* September 14, 1919); *War and Mental Diseases* (*American Journal of Public Health,* January, 1918); *War Neuroses, Shell Shock and Nervousness in Soldiers* (*Journal of the American Medical Association,* December 28, 1918); *Backward Children* (*New York State Commission for Mental Defectives,* 1920); *Diagnostic Clinic for Adolescents; Purpose and Organization* (*Archives of Neurology and Psychiatry,* November, 1920); *Contribution to the Mental Pathology of Races in the United States* (*Archives of Neurology and Psychiatry,* February, 1922); *Efficiency and Inefficiency; a Problem in Medicine* (*Mental Hygiene,* April, 1917); *Heroin Habit,* (*New Republic,* April 22, 1916); *Psychiatric Clinics* (*New Republic,* June 2, 1917); *State Care, Training, and Education of Mental Defectives* (*Mental Hygiene,* January, 1922); *Thaw and the Law's Insanity* (*New Republic,* February 3, 1917); *Social Defectives Survey,* September 15, 1920).

He was a member of the Editorial Board of the *Archives of Neurology and Psychiatry.*

While Dr. Bailey chose to devote his professional life to neurology and psychiatry, he was not a specialist of narrow interests. His interests were broad and essentially "human." The early death of his wife and illness in his own family tinged his own life with sorrows, but he never lost sight of the sorrows of his fellow men, nor did he falter in his effort in their behalf. His work will live after him, like something that grows.

F. E. W.

## ANDREW W. HOISHOLT, M. D.,

### San Francisco and Napa.

A great loss was sustained by the medical profession of California by the death on December 17, 1920, of Dr. Andrew W. Hoisholt. Dr. Hoisholt was born in Copenhagen, 62 years ago, but came here with his family as a boy and received his education and did his work in California. He graduated from Cooper Medical College in 1882 and then went to Europe and took a

degree in the University of Heidelberg in 1889. He returned to California and took a place on the staff of Stockton State Hospital, which he filled for many years. He left Stockton in 1912 to become superintendent of Napa State Hospital, and this position he held at the time of his death.

Dr. Hoisholt takes rank as the foremost psychiatrist who has been developed on the Pacific Coast. While a member of the staff at Stockton he became known for his scientific and progressive outlook on his chosen field, and later, as superintendent at Napa, he made many improvements in the administration and in the plant itself, which will long survive him. He introduced a system of case histories at Napa, far in advance of those found in most state hospitals and which compares favorably with those found in large clinic hospitals. Because of his insistence that the insane were patients and not culprits, his administration was characterized by an extraordinary degree of gentleness and humanity.

He made valuable contributions to the scientific as well as to the administrative side of psychiatry, particularly in the matter of statistical data of great medical and social interest and more particularly by his translations of foreign writers. His translation of Dr. August Winner's "Psychiatric-Neurologic Examination Methods" was the most recent of these.

In addition to his work as a psychiatrist he was an important figure in medical education on the Pacific Coast. While at Stockton he taught physiology at Cooper Medical School and the scientific course he gave, far in advance of anything previously given here, is still remembered by many California doctors. He made two further important contributions to medical education. One of these was his service as professor of psychiatry in Stanford Medical School since its foundation. The other was the establishment, in close co-operation with Dr. Wilbur, of the arrangement whereby internes may spend part of their rotating service in state hospitals. This has resulted in giving each year a group of medical men real experience in and knowledge of psychiatry, a subject concerning which physicians in the past have been lamentably ignorant. This idea will be perpetuated and is being copied in other parts of the country.

His close friends knew Dr. Hoisholt as a man of extraordinary culture and charm. He was a skillful and educated musician. A stringed quartette which he organized at Stockton achieved more than a local reputation and some members of it are now nationally known. He was a critic and lover of art. His collections of orchids and of coins are among the best known on the Coast. He had a thorough botanical knowledge of California plants. His familiarity with Scandinavian and English literature made him always a delightful conversationalist. The hospitality shown by him and Mrs. Hoisholt will be long remembered by those who have enjoyed it.

The passing of such a man as Dr. Hoisholt leaves a gap not easily filled in professional and educational circles in this state, and among his many close friends there remains a sense of distinct personal loss.

## JAMES WOODS BABCOCK, A. B., M. D., LL. D.

James Woods Babcock, *the* alienist of South Carolina, the man who identified pellagra in the United States, died in an attack of angina at his home in Columbia, March 3, 1922.

He was born in Chester, S. C., August 11, 1856, the son of Dr. Sidney E. Babcock and Margaret (Woods) Babcock. Dr. Sidney E. Babcock was educated in Europe, was a surgeon in the Confederate Army and a practitioner of medicine in Chester before and after the Civil War.

During the war many families were obliged to leave Charleston, S. C., and seek safety elsewhere. A Mrs. Strobel took her children from there to Chester. There James W. Babcock and Edward H. Strobel were playmates and their intimacy lasted through life. Strobel later became professor of international law at Harvard University and died in Siam, where he was the legal adviser to the King. He fitted for college in Charleston, where schools were better than in Chester, and entered Harvard in 1873. At the end of his first year there he visited his old friends in Chester and persuaded Dr. Babcock to send James for one year to Phillips Academy, Exeter, N. H. James went north, remained at Exeter four years and graduated. With his father's permission, easily obtained now that the doctor realized that the north had not con-

taminated his boy, he entered Harvard College, graduating in 1882 with the degree of A. B. *cum laude*. In 1886, he graduated from the Harvard Medical School. During his last year there he was a house officer at the McLean Hospital, then located at Somerville. After graduating he was appointed assistant physician to the hospital and remained there until Governor Tillman convinced him it was his duty to accept the superintendency of the insane hospital of his native state. He filled this position from 1891 until 1914.

From the time he went to Columbia until Senator Tillman's death Dr. Babcock was his personal physician. Those who knew Senator Tillman could see the effect this gentle soul had upon his rough but sterling character.

In 1892, he married Miss Katherine Guion of Lincolnton, N. C. Miss Guion was a graduate of the Mass. General Hospital Training School for Nurses. She proved herself a real help mate to the Doctor in his work.

Dr. Babcock's life work was really done at this state hospital in Columbia. He was the first to call attention to the enormous death rate from tuberculosis among the patients in the insane hospitals, both north and south. In 1894, he read a paper before the American Medico-Psychological Association entitled "The Prevention of Tuberculosis in Hospitals for the Insane." It is a model to be followed to-day. It was published in Volume 1 of the Transactions of the American Medico-Psychological Association.

He was the first to recognize pellagra in this country. That was in 1907. Dr. C. H. Lavinder of the U. S. Public Health Service confirmed his work, and together they published the first treatise on pellagra in the English language.

In 1905, South Carolina College recognized his services by giving him the degree of LL. D. His city took advantage of his sanitary knowledge. He served on the Board of Health, the Water Commission and the Sewer Commission of Columbia.

From 1915 until his death he was professor of mental diseases at the South Carolina Medical College. A close observer and an accurate diagnostician, he was the sympathetic friend and adviser of every physician with a difficult mental case through a large part of the south land, and after a consultation, was quite apt to send a reprint covering the case.

His knowledge of general literature was enormous. Wherever he was, in Columbia, Charleston, New York, Boston or Paris, he could always be most surely found in the book stores. He came naturally by this love of books, for his grandfather Babcock carried on a book store in Charleston, having moved there from Connecticut.

Generous to a fault, public spirited, kind, the friend of every one in trouble, irrespective of race, color, creed or position in society, a man whom other men loved, he is missed by all who knew him.

HERBERT B. HOWARD.

## CHARLES EDWARD DOHERTY, M. D., C. M.

Lieut-Col. Charles Edward Doherty, M. D., C. M., died August 14, 1920, after a few months' illness from nephritis; this terminated a brilliant career in the medical profession, the Canadian Army and the service of his comrades in arms.

Dr. Doherty was born November 29, 1872, in Peel County, Ontario. Educated in the public schools, Toronto University and Trinity Medical College, where he graduated in 1899. Following post-graduate work in Toronto hospitals, he went to British Columbia, which was from that time to be his home and was the field in which his very best work was done.

In May, 1902, he was appointed assistant medical superintendent of the Hospital for Insane but left the service in 1904 to enter private practice. On March 1, 1905, he was appointed medical superintendent of the Mental Hospital for British Columbia, New Westminster, and held this position until the time of his death. Under the guidance of Dr. Doherty and as a result of his vision, zeal and ability the care of the insane in British Columbia was brought from the simple custodial care to the highly efficient and complicated system of treating insane by modern methods. Under his direction the highly efficient and modern plant at Essondale was organized and developed and Colony Farm placed in the position it enjoys today of being the model institutional farm of the continent.

Dr. Doherty's military career is no less conspicuous than his civil record. He went overseas with the 7th Battalion in August,

1914; was transferred to medical service and his ability as an organizer being quickly recognized, he was made A. D. M. S. and recalled to London. In 1917 he was sent to Canada to organize the hospital at New Market and upon completion of this work he returned to B. C. in March, 1918, but was again called for military service and appointed A. D. M. S., M. D. XI, which position he held until after the armistice, when he returned to take up his duties at the hospital for the insane.

As a friend and worker on behalf of returned soldiers he was second to none, and not only took a friendly interest but was an active worker and assumed many arduous duties on behalf of his comrades. He was a strenuous worker while a member of the British Columbia Executive of the G. W. V. A., and so successful was he that his comrades were anxious that he should become president of the Dominion Organization, Unfortunately ill health prevented this and many other splendid works the doctor would dearly have loved to carry out and death ended a career only well begun though great things were already accomplished.

## ALONZO P. WILLIAMSON, A. M., M. D., LL. D.

Alonzo P. Williamson, A. M., M. D., LL. D., was born in Philadelphia, Pennsylvania, April 28, 1854, died in Santa Monica, California, October 21, 1920.

His father, Dr. Walter Williamson, was the founder of Hahnemann College and Hospital of Philadelphia, from which college Dr. Alonzo P. Williamson graduated in 1876. After graduating in medicine he became interne at the New York City Hospital, Wards Island, and later became a member of the medical staff of the Middletown, New York, State Hospital for Insane. He subsequently spent a year and a half in Vienna and other European medical centers, and upon his return was made chief of staff at Wards Island at the age of 25, being the youngest physician to occupy this important position. After serving in this capacity for three years he accepted the position of first assistant physician of the Middletown State Hospital for the Insane, Middletown, N. Y., where he served to the great credit of the institution from 1883 to 1890. While at Middletown he was lecturer on mental diseases at Hahnemann College, Philadelphia, Pennsylvania.

In 1890 he was called from Middletown to become superintendent of the Fergus Falls State Hospital at Fergus Falls, Minnesota, a new hospital which he organized and equipped and which stands today as one of the many monuments to the splendid service rendered to humanity by this good man. After three years as superintendent of the Fergus Falls State Hospital Dr. Williamson moved to Minneapolis and for 12 years specialized in mental and nervous diseases and became renowned as a specialist in this line and as an expert in legal cases. During his residence in Minneapolis he was for 10 years dean of the Homeopathic Medical College of the University of Minnesota. He studied law, graduating in 1894, subsequently receiving his LL. D. degree and became lecturer in Medical Jurisprudence in the law department of the University of Minnesota.

In 1904 he was elected medical superintendent of the Southern California State Hospital, at Patton, California, which position he resigned in 1908. The remaining 12 years of his life were spent in the practice of medicine in Santa Monica, California, where he served as a member of the Los Angeles County Lunacy Commission and did an extensive consultation practice in mental and nervous diseases, and otherwise maintained an intimate relationship to the subject of psychiatry.

His splendid service at the Middletown State Hospital for Insane, Middletown, N. Y., Fergus Falls Hospital for Insane, Fergus Falls, Minn., and Southern California State Hospital, Patton, Calif., will stand as eternal monuments to his superior character and ability. He was a man loved and admired by all who came to know him and respected for his sterling worth and faithfulness to duty. Dr. Williamson gave the greater part of his life to the study and practice of psychiatry and contributed much of value to the literature on this subject. He was one of the oldest members of the American Psychiatric Association and gave freely of his time and active service in various other local, state and national medical societies.

## CHARLES WARNER HALTERMAN, M. D.

Charles Warner Halterman was born in Freemansburg, West Virginia, April 30, 1868. He obtained his education in the public schools, the Normal School and Classical Academy at Buchannon,

West Virginia. He attended the Eclectic Medical College at Cincinnati, Ohio, and was graduated from this college in 1889, at this time he began to practice medicine at Jarvisville, West Virginia, and remained there until 1901, when he moved to Clarksburg, West Virginia.

In 1902, he was married to Elsie D. Coffman, of Clarksburg, West Virgina, until 1913 he devoted himself to general practice of medicine, when he began to limit his practice to mental and nervous diseases, after taking special post-graduate courses in neuro-psychiatry, at the New York Post-Graduate Medical School in 1903, and later at Fordham University, New York City, and Harvard Medical School of Boston, Mass.

Dr. Halterman was Harrison County Health Officer from 1903 to 1909 and served one term as member of the city council. He was a member of the State Board of Health of West Virginia from 1909 to 1913 and was a member of the Board of Education of Clarksburg Independent School District in 1910 and 1911.

He was medical inspector of Clarksburg Schools in 1911 and 1912. When Governor H. D. Hatfield took office in 1913, he appointed Dr. Halterman as superintendent of the State Hospital for the Insane at Weston, West Virginia, a position which he filled for four and one-half years with credit and distinction. Responding to the call to arms in the late world war, Dr. Halterman volunteered his services and was commissioned a captain in the medical corps and served at Camp Upton, Long Island, New York, and Camp Shelby, Hattiesburg, Miss., having charge of the neurological work at each place. He received his honorable discharge from the army at Camp Shelby, March 31, 1919, returning to his home at Clarksburg, West Virginia, where he resumed the practice of his specialty. He became ill February 6, and died May 11, 1921, and West Virginia lost one of her most valued citizens.

# Appointments, Resignations, Etc.

ALBERTSON, DR. CHARLES S., appointed Medical Interne at Binghamton State Hospital at Binghamton, N. Y., September 26, 1921, and resigned December 15, 1921.

APFELBERG, DR. BENJAMIN, appointed Assistant Physician at Kings Park State Hospital at Kings Park, N. Y., December 27, 1921.

ARCHETTO, DR. ANGELO, Medical Interne at Kings Park State Hospital at Kings Park, N. Y., resigned September 30, 1921.

ASHE, DR. WILLIAM RUFFIN, formerly Resident Physician at New York City Hospital for the Insane and Bloomingdale Asylum, died suddenly from heart disease, August 30, 1921, aged 56.

BABCOCK, DR. JAMES WOODS, Proprietor of Waverly Sanitarium, near Columbia, S. C., and formerly Superintendent of State Hospital for the Insane at Columbia, S. C., died March 3, 1922, of heart trouble, aged 66.

BAILEY, DR. PEARCE, in charge of Neuro-psychiatric Division, Surgeon-General's Office, during the world war; an eminent neurologist, died in New York City February 11, 1922, aged 57.

BARR, DR. ROY L., Assistant Physician at Rochester State Hospital at Rochester, N. Y., died November 4, 1921.

BLAN, DR. HORACE, Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., resigned July 12, 1921.

BONNYMAN, DR. DOUGLAS D., appointed Medical Interne at Middletown State Homeopathic Hospital at Middletown, N. Y., September 16, 1921.

BOROS, DR. EDWIN, appointed Medical Interne at Manhattan State Hospital at Wards Island, N. Y., August 26, 1921, and promoted to Assistant Physician December 1, 1921.

BROWN, DR. JOHN E., Superintendent of Central State Hospital for the Insane at Waupun, Wis., was injured in an automobile accident in January, 1922.

BRUNNER, DR. ETHAN E., appointed Superintendent of State Hospital No. 4 at Farmington, Mo.

BUCKLEY, DR. CORNELIUS J., appointed Medical Interne at Kings Park State Hospital at Kings Park, N. Y., October 27, 1921.

CAINE, DR. ARTHUR T., appointed Superintendent of Anoka State Hospital at Anoka, Minn.

CANE, DR. BYRON S., Assistant Physician at Kings Park State Hospital at Kings Park, N. Y., resigned October 31, 1921.

CHANNING, DR. WALTER, Superintendent of the Channing Sanitarium at Brookline, Mass., died November 23, 1921, aged 72.

CLARK, DR. CHARLES H., Superintendent of Ohio State Hospital for Criminal Insane at Lima, elected President of Northwestern Ohio District Medical Association.

CURTIS, DR. BARBARA, Assistant Physician at Buffalo State Hospital at Buffalo, N. Y., transferred to St. Lawrence State Hospital at Ogdensburg August 1, 1921, and retransferred to Buffalo State Hospital September 30, 1921.

DALEY, DR. MARK J., appointed Medical Interne at Hudson River State Hospital at Poughkeepsie, N. Y., August 15, 1921, and promoted to Assistant Physician January 1, 1922.

DELANEY, DR. WILLIAM J., Assistant Physician at Central Islip State Hospital at Central Islip, N. Y., promoted to Senior Assistant Physician November 1, 1921.

DOWD, DR. W. R., appointed Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., October 6, 1921, and resigned December 27, 1921.

EVANS, DR. MARY, appointed Medical Interne at Manhattan State Hospital at Wards Island, N. Y., July 1, 1921, and resigned August 19, 1921.

FRIEDRICH, DR. CHARLES, Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., promoted to Assistant Physician August 4, 1921.

FUCHS, DR. JOSEPH, Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., resigned September 30, 1921.

FULLER, DR. EARL W., Senior Assistant Physician at Rome State School at Rome, N. Y., appointed Physician on the New York State Commission on Mental Defectives.

GARFINKEL, DR. ARTHUR, appointed Medical Interne at Manhattan State Hospital at Wards Island, N. Y., October 6, 1921.

GILLESPIE, DR. EDWARD, Senior Assistant Physician at Binghamton State Hospital at Binghamton, N. Y., promoted to First Assistant Physician August 1, 1921.

GIRARDEAU, DR. CLAUDE, Medical Interne at Manhattan State Hospital at Wards Island, N. Y., resigned August 1, 1921.

GRADY, DR. LILLIAN R., appointed Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., November 19, 1921.

GUNDRY, DR. LEWIS H., Superintendent and Owner of Relay Sanitarium at Relay, Md., died September 15, 1921.

HAVILAND, DR. C. FLOYD, Superintendent of Connecticut State Hospital at Middletown, appointed to New York State Hospital Commission December 19, 1921, and elected Chairman December 21, 1921.

HAVILAND, DR. HAROLD C., Senior Assistant Physician at Buffalo State Hospital at Buffalo, N. Y., has been granted a year's leave of absence from November 3, 1921, and has gone to Colorado Springs on account of his health.

HAYES, DR. ALBERT L., appointed Medical Interne at Hudson River State Hospital at Poughkeepsie, N. Y., October 15, 1921, and promoted to Assistant Physician October 24, 1921.

HODDER, DR. LESLIE G., appointed Medical Interne at Kings Park State Hospital at Kings Park, N. Y., September 1, 1921, and resigned October 31, 1921.

HODGINS, DR. RICHARD S., appointed Dentist at St. Lawrence State Hospital at Ogdensburg, N. Y., October 3, 1921.

HOFFMAN, DR. KENNETH I., appointed Assistant Physician at Hudson River State Hospital at Poughkeepsie, N. Y., September 12, 1921, and resigned December 31, 1921.

HOLROYD, DR. SAMUEL R., Superintendent of State Hospital for the Insane at Spencer, W. Va., resigned.

HOWARD, DR. ROBERT HENRY, formerly Assistant Physician at Bryce Hospital at Tuscaloosa, Ala., died December 27, 1921, from heart disease, aged 39.

HUNT, DR. JAMES RAMSAY, appointed Consultant in Neurology at New York State Psychiatric Institute at Wards Island, N. Y.

HUTCHINSON, DR. ANNA, Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., retired August 1, 1921.

JAMISON, DR. GERALD R., Assistant Physician at Hudson River State Hospital at Poughkeepsie, N. Y., promoted to Senior Assistant Physician October 1, 1921.

JAMISON, DR. WILLIAM F., Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., promoted to Senior Assistant Physician October 4, 1921.

JELLIFFE, DR. SMITH ELY, elected President of New York Psychiatric Society.

KAHN, DR. SAMUEL, appointed Medical Interne at Kings Park State Hospital at Kings Park, N. Y., January 2, 1922.

KANE, DR. BYRON S., appointed Assistant Physician at Kings Park State Hospital at Kings Park, N. Y., August 3, 1921.

KIRSCH, DR. NATHAN, appointed Dental Interne at Central Islip State Hospital at Central Islip, N. Y., October 5, 1921.

KNAPP, DR. WILLIAM M., formerly Superintendent of Nebraska Hospital for the Insane at Lincoln, died November 16, 1921, aged 74.

LAUGHLIN, DR. E. ROSS, appointed Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., August 1, 1921.

LEVIN, DR. HYMAN L., Senior Assistant Physician at St. Lawrence State Hospital at Ogdensburg, N. Y., resigned September 30, 1921.

LONERGAN, DR. MICHAEL P., Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., promoted to senior Assistant Physician October 4, 1921.

MACARTHUR, DR. CHARLOTTE B., Assistant Physician at Willard State Hospital at Willard, N. Y., promoted to Senior Assistant Physician October 1, 1921.

MACLACHLAN, DR. MARY, Medical Interne at Manhattan State Hospital at Wards Island, N. Y., promoted to Assistant Physician January 1, 1922.

MCCANNA, DR. LEWIS E., appointed Assistant Physician at Kings Park State Hospital at Kings Park, N. Y., October 24, 1921, and resigned December 31, 1921.

MCCLUNG, DR. DENNIS, appointed Superintendent of State Hospital for the Insane at Spencer, W. Va.

MCGAFFIN, DR. CHARLES G., Senior Assistant Physician at Kings Park State Hospital at Kings Park, N. Y., granted six months' leave of absence from August 1, 1921, to accept a position in the New York City Children's Hospital at Randall's Island.

MAMLET, DR. ALFRED E., appointed Medical Interne at Manhattan State Hospital at Wards Island, N. Y., July 1, 1921, and resigned January 1, 1922.

MURPHY, DR. OWEN L., Medical Interne at Kings Park State Hospital at Kings Park, N. Y., resigned September 30, 1921.

PAINE, DR. HARLAN L., formerly Assistant Commissioner, Department of Mental Diseases, Commonwealth of Massachusetts, recently Chief Executive Officer, Boston Psychopathic Hospital, appointed Medical Superintendent, Grafton State Hospital, North Grafton, Mass. Assumed duties September 15, 1921.

PECK, DR. MARTIN W., Assistant Physician at Boston Psychopathic Hospital at Boston, Mass., resigned to enter private practice April 1, 1922.

PILGRIM, DR. CHARLES W., formerly Chairman New York State Hospitals Commission, elected Vice-President of New York Psychiatrical Society at its annual meeting December 7, 1921. December 8, 1921, he was tendered a dinner celebrating forty years of service in the New York State hospitals.

PINDLER, DR. L. A., Medical Interne at Central Islip State Hospital at Central Islip, N. Y., promoted to Assistant Physician October 1, 1921.

PRIESTMAN, DR. GORDON, Senior Assistant Physician at Willard State Hospital at Willard, N. Y., appointed Pathologist at St. Lawrence State Hospital at Ogdensburg, N. Y., October 1, 1921.

POWELL, DR. HOMER, appointed Medical Interne at Utica State Hospital at Utica, N. Y., October 1, 1921, and resigned November 6, 1921, to reënter U. S. Army.

RETZ, DR. LOUIS D., appointed Assistant Physician at Brooklyn State Hospital at Brooklyn, N. Y., November 1, 1921.

RIEDEL, DR. HEINRICH FERDINAND, formerly Superintendent of Emigrant Insane Asylum at Blackwell's Island, N. Y., died January 17, 1922, from pneumonia, aged 82.

ROBINSON, DR. D. C., appointed Medical Interne at Brooklyn State Hospital at Brooklyn, N. Y., November 1, 1921.

ROGERS, DR. HENRY W., appointed Senior Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., January 1, 1921.

RORICK, DR. ESTELL H., formerly Superintendent of State Hospital for the Insane at Athens, Ga., died January 27, 1922, from cerebral hemorrhage, aged 79.

ROSE, DR. BEN-HENRY, appointed Medical Interne at Manhattan State Hospital at Wards Island, N. Y., November 6, 1921, and dropped December 26, 1921.

SANDY, DR. WILLIAM C., Psychiatrist to the Commission of Mental Defectives of the State of New York, appointed Chief of Division of Mental Health of the State Welfare Commission of Pennsylvania.

SHAW, DR. FRANCIS C., appointed Assistant Physician at St. Lawrence State Hospital at Ogdensburg, N. Y., August 1, 1921.

SILVERMAN, DR. BARNET, appointed Medical Interne at Manhattan State Hospital at Wards Island, N. Y., August 16, 1921.

SMITH, DR. J. ANSON, Superintendent of Camden County Hospital for the Insane at Blackwood, N. J., died at the Cooper Hospital at Camden, October 27, 1921, following an operation for appendicitis, aged 50.

SMITH, DR. PERCY L., Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., resigned July 22, 1921.

SRYGLEY, DR. ELAM FILO, Assistant Physician at Newberry State Hospital at Newberry, Mich., died January 11, 1922, from pneumonia, aged 31.

STEBLEN, DR. ERNEST S., Medical Interne at Binghamton State Hospital at Binghamton, N. Y., promoted to Assistant Physician December 1, 1921.

STRAUB, DR. D. WALTER, Consultant at State Hospital for Criminal Insane at Farview, Pa., died November 29, 1921, following an operation, aged 66.

SULLIVAN, DR. ELIZABETH, appointed Medical Interne at Manhattan State Hospital at Wards Island, N. Y., August 1, 1921, and resigned September 16, 1921.

TAYLOR, DR. ISAAC MONTROSE, Superintendent of Broadoaks Sanitarium at Morganton, N. C., died November 26, 1921, from heart disease, aged 64.

THOMSON, DR. ADAM FINDLAY, appointed Medical Interne at Binghamton State Hospital at Binghamton, N. Y., October 17, 1921.

TIGHE, DR. LEO R., Medical Interne at Hudson River State Hospital at Poughkeepsie, N. Y., resigned October 23, 1921.

TOPPING, DR. MOSES H., appointed Superintendent of Colony for Feebleminded and Epileptic at Marshall, Mo.

TOWNSEND, DR. THEODORE I., First Assistant Physician at Binghamton State Hospital at Binghamton, N. Y., resigned July 31, 1921, and appointed Senior Assistant Physician at Willard State Hospital at Willard, N. Y., October 1, 1921.

TREVISANO, DR. ANTHONY, appointed Medical Interne at Kings Park State Hospital at Kings Park, N. Y., January 3, 1921.

TUCKER, DR. HYMAN, appointed Medical Interne at Brooklyn State Hospital at Brooklyn, N. Y., December 1, 1921.

VANDEMARK, DR. JOHN L., Medical Inspector of New York State Hospital Commission, appointed First Assistant Physician at Rochester State Hospital at Rochester, N. Y., October 1, 1921.

WELCH, DR. JOSEPH, Assistant Physician at Manhattan State Hospital at Wards Island, N. Y., resigned November 1, 1921.

WHITE, DR. F. R. S., appointed Superintendent of Hospital for Insane at Wichita Falls, Texas.

WILKINSON, DR. HENRY F., appointed Medical Interne at Manhattan State Hospital at Wards Island, N. Y., August 9, 1921.

WORK, DR. HUBERT, Superintendent of Woodcroft Hospital at Pueblo, Col., appointed Postmaster-General of the United States.

ZELLER, DR. GEORGE A., appointed Managing Officer of Peoria State Hospital at Peoria, Ill., a position he had previously held.

ZIMMERMAN, DR. ROBERT F., Senior Assistant Physician at Utica State Hospital at Utica, N. Y., resigned September 1, 1921, on account of ill health.

# SUBJECT INDEX

NOTE.—Abbreviations: [Rev] denotes a book review, [N] an editorial note, [Obit] an obituary, [Abs] an abstract.


Abstracts and Extracts, 136.
Acute psychoses with symptoms resembling dementia præcox, Theodore A. Hoch, 365.
Adolescent will-profile [Abs], June E. Downey, 139.
Appeal, An, on behalf of the secretary-treasurer [N], 696.
Appointment of Dr. Haviland [N], 479.
Appointment of Dr. David K. Henderson [N], 125.
Appointments, Resignations, Etc., 315, 715.
Association and hospital news and notes, 109, 295, 481, 693.
Association, Meeting of the, in Boston [N], 109.

Babcock, James Woods [Obit], Herbert B. Howard, 709.
Bailey, Dr. Pearce [Obit], 704.
Bayle, The centenary of the thesis of [N], 691.
Betts, Dr. Joseph Barton [Obit], 499.
Blood constituents and mental state, H. S. Newcomer, 609.
Bloomingdale, The celebration at [N], 111.
Blumer, George Alder, Dedication of the laboratory [N], 120, 295.
Book Reviews, 127, 486, 698.
Bulletin of Iowa Institutions, Vol. xxii [Rev], 703.

Case, A, of psychasthenic delirium, Pierre Janet, 319.
Celebration at Bloomingdale [N], 101.
Celebration, The, at Bloomingdale [N], 111.
Centenary, The, of the thesis of Bayle [N], 689.
Change of address of Secretary-treasurer [N], 490.
Channing, Walter, M. D., LL. D., [Obit], 491.
Chase, Robert Howland, M. D., [Obit], 497.
Chloroform delirium [N], 125.
Conduct, Rating scheme for, James S. Plant, 547.
Connotations as a factor in the mental health of the community, Donald A. Laird, 41.
Constructive formulation of schizophrenia, Adolf Meyer, 355.
Control, The, of communicable diseases in psychiatric hospitals, E. B. Saye, 79.
Correction [N], 125.

Dedication, The, of the George Alder Blumer Laboratory [N], 120.
Dedication, The, of the George Alder Blumer Laboratory at Utica [N], 295.
Delirium, A case of psychasthenic, Pierre Janet, 319.
Dementia præcox, Acute psychoses with symptoms resembling, Theodore A. Hoch, 365.
Dementia præcox and the adolescent psychoses from the organic visceral viewpoint as regards prognoses and therapy, Daniel J. McCarthy, 385.
Dementia præcox and syphilis, Ransom A. Greene, 399.
Dementia præcox, Reaction in, to the intravenous administration of non-specific protein, Theophile Raphael and Sherman Gregg, 31.
Dementia præcox, Some considerations bearing on the diagnosis and treatment of, William A. White, 193.
Dementia præcox, The platelet count and bleeding time in catatonic, Shichi Uyematsu, 15.
Department, A new, in the Journal [N], 107.
Diagnosis and statistics [N], 291.
Dinner to Dr. Charles W. Pilgrim [N], 483.
Doherty, Charles Edward [Obit], 711.
Duke, Dr. John Williams [Obit], 500.

Election [N], 125.
Emotional states and illegal acts in connection with schizophrenia, John Rathbone Oliver, 589.
Encephalitis, Report of a case of epidemic, with cord changes suggestive of the possibility of an early syringomyelia, Ada F. Harris, 679.
Environment as it influences the juvenile delinquent, Percy L. Dodge, 629.
Epilepsy in the offspring of epileptics, D. A. Thom and Gerna S. Walker, 613.
Essay, An, on the physiology of the mind [Rev], Francis X. Dercum, 702.
Extending the field of conscious control [Abs], William A. White, 139.
Extra-institutional activities for mental defectives in New York state, William C. Sandy, 167.

Ferguson, Dr. Kenneth M. [Obit], 501.
Fire in the Middletown, N. Y., State Hospital [N], 482.
Fourth annual report of the Massachusetts Commission on Mental Diseases [Rev], 703.
French league of mental hygiene and prophylaxis [N], 100.
French superintendents, Age limit for [N], 294.

Halterman, Charles Warner [Obit], 713.
Haviland, Dr., Appointment of [N], 479.
Henderson, Dr. David K., Appointment of [N], 125.
Hoisholt, Andrew W. [Obit], 707.
How a state hospital cooperated with a university to meet a community need, Henry I. Klopp, 159.

Importance, The, of endocrine therapy in combination with mental analysis in the treatment of certain cases of personality deviation, Edith R. Spaulding, 373.
Improper use of the I. Q. [Abs], Edgar A. Doll, 137.
Individual variations in mental equipment [Abs], Augusta F. Bronner, 136.
Industrial psychiatry, Jau Don Ball, 639.
International congress of mental health [N], 480.

Juvenile delinquent, Environment as it influences the, Percy L. Dodge, 629.

Laboratory dedication at Utica [N], 103, 120, 295.
Laboratory service, The, in state hospitals for mental diseases, Harold I. Gosline, 409.
Laws, Some important [N], 124.

Magnesium as a sedative, Paul G. Weston, 637.
Major symptoms, The, of hysteria [Rev], Pierre Janet, 487.
Manner, The, of man that kills [Rev], L. Vernon Briggs, 486.
Manual of psychiatry [Rev], Aaron J. Rosanoff, 134.
Medizinische psychologie [Rev], Ernest Kretschner, 702.
Meeting, The, of the association in Boston [N], 109.
Melancholia, The prognosis of involution, August Hoch and John T. McCurdy, 433.
Mental analysis, The importance of endocrine therapy in combination with, in the treatment of certain cases of personality deviation, Edith R. Spaulding, 373.
Mental defectives, Extra-institutional activities for, in New York state, William C. Sandy, 167.
Mental health of the community, Connotations as a factor in the, Donald A. Laird, 41.
Mental hygiene and prophylaxis, French league of [N], 100.
Mental Hygiene, International Congress of [N], 480.

Nature, The, of functional disease, William McDougal, 335.
Negro, Psychological traits of the southern, with observations as to some of his psychoses, W. M. Bevis, 69.
Neuro-psychiatric wards, The, of the United States government; Their housing and other problems, John Joseph Kindred, 183.
New Department in the journal [N], 107.
Note, A, from Samuel Tuke to the New York Hospital (1811), Henry Viets, 425.
Notes and Comment, 97, 291, 475, 689.

Occupational therapy [N], 294.
On the nature of thinking disorder, F. L. Wells, 537.
Oregon, The, survey of mental defect, delinquency and dependency [N], 689.

Pilgrim, Dr., Dinner to [N], 483.
Pilgrim, Dr., Resignation of [N], 478.
Platelet count, The, and bleeding time in catatonic dementia præcox, Shichi Uyematsu, 15.
Portrait of Benjamin Rush [N], 106.
Practical psychology and psychiatry [Rev], C. B. Burr, 135.
Preliminary study, A, of the precipitating situation in 200 cases of mental disease, Edward A. Strecker, 503.
Presidential address, Owen Copp, 1.
Proceedings of fifteenth annual meeting of the Association of Life Insurance Presidents [Rev], 703.
Proceedings of Societies:
American Medico-Psychological Association. Proceedings of the seventy-seventh annual meeting, Boston, Mass., May 31, June 1, 2, 3, 1921, 211.
Prognosis, The, of involution melancholia, August Hoch and John T. McCurdy, 433.
Program Committee, A request from [N], 311.
Psychiatric hospitals, The control of communicable diseases in, E. B. Saye, 79.
Psychiatry in its relation to public health [N], 475.
Psychiatry, The American Journal of [N], 99.
Psychoanalysis, its theories and practical application [Rev], A. A. Brill, 698.
Psychological traits of the southern negro with observations as to some of his psychoses, W. M. Bevis, 69.
Psychopathology [Rev], Edward J. Kempf, 127.
Public school clinics in connection with a state school for the feeble-minded [Abs], E. E. Woodill, 138.

Rating scheme for conduct, James S. Plant, 547.
Reaction in dementia præcox to the intravenous administration of non-specific protein, Theophile Raphael and Sherman Gregg, 31.
Recreation for mental cases, R. F. I. Ridgway, 87.
Report of a case of epidemic encephalitis with cord changes suggestive of the possibility of an early syringomyelia, Ada F. Harris, 679.
Request, A, from the program committee [N], 311.
Resignation of Dr. Pilgrim [N], 478.
Reversible schizophrenia, Karl A. Menninger, 573.
Rush, Benjamin, A portrait of [N], 106.

Savage, Sir George H., M. D., F. R. C. P. [Obit], 493.
Schizophrenia, Constructive formulation of, Adolf Meyer, 355.
Schizophrenia, Emotional states and illegal acts in connection with, John Rathbone Oliver, 589.
Schizophrenia, Reversible, Karl A. Menninger, 573.
Seventy-seventh annual meeting [N], 97.
Seventy-eighth annual meeting of the American Psychiatric Association [N], 693.
Social service and out-patient relations, John B. Macdonald, 141.

Some considerations bearing on the diagnosis and treatment of dementia præcox, William A. White, 193.
Some important laws [N], 124.
Some problems concerning the association. Presidential address, Owen Copp, 1.
State hospitals for mental diseases, The laboratory service in, Harold I. Gosline, 409.
Study, A, of "X"; Psychometric and otherwise, Lloyd H. Ziegler, 199.
Survey, The Oregon, of mental defect, delinquency and dependency [N], 689.
Syphilis, Dementia præcox and, Ransom A. Greene, 399.

Thinking disorder, On the nature of, F. L. Wells, 537.
Transactions of the College of Physicians of Philadelphia, Third series, Vol. 42 [Rev], 703.
Tuke, Samuel, A note from, to the New York Hospital (1811), Henry Viets, 425.
Twelfth biennial report of the Board of Control of Iowa institutions [Rev], 703.

Unconscious, The [Rev], Morton Prince, 488.

What happened to discharged patients, George K. Butterfield, 177.
Williamson, Alonzo P. [Obit], 712.

Yellowlees, David, M. D., LL. D., [Obit], 495.

# AUTHORS' INDEX


Ball, Jau Don, Industrial psychiatry, 639.
Bevis, W. M., Psychological traits of the southern negro with observations as to some of his psychoses, 69.
Butterfield, George K., What happened to discharged patients, 177.

Copp, Owen, Presidential address, 1.

Dodge, Percy L., Environment as it influences the juvenile delinquent, 269.

Gosline, Harold I., The laboratory service in state hospitals for mental diseases, 409.
Greene, Ransom A., Dementia præcox and syphilis, 399.
Gregg, Sherman, Theophile Raphael and, Reaction in dementia præcox to the intravenous administration of non-specific protein, 31.

Harris, Ada F., Report of a case of epidemic encephalitis with cord changes suggestive of the possibility of an early syringomyelia, 679.
Hoch, August, and John T. McCurdy, The prognosis of involution melancholia, 433.

Janet, Pierre, A case of psychasthenic delirium, 319.

Kindred, John Joseph, The neuro-psychiatric wards of the United States government; Their housing and other problems, 183.
Klopp, Henry I., How a state hospital cooperated with a university to meet a community need, 159.

Laird, Donald A., Connotations as a factor in the mental health of the community, 41.

Macdonald, John B., Social service and out-patient relations, 141.
McCarthy, Daniel J., Dementia præcox and the adolescent psychoses from the organic visceral viewpoint as regards prognoses and therapy, 385.
McCurdy, John T., August Hoch and, The prognosis of involution melancholia, 433.
McDougal, William, The nature of functional disease, 335.
Menninger, Karl A., Reversible schizophrenia, 573.
Meyer, Adolf, Constructive formulation of schizophrenia, 355.

Newcomer, H. S., Blood constituents and mental state, 609.

Oliver, John Rathbone, Emotional states and illegal acts in connection with schizophrenia, 589.

Plant, James S., Rating scheme for conduct, 547.

Raphael, Theophile, and Sherman Gregg, Reaction in dementia præcox to the intravenous administration of non-specific protein, 31.
Ridgway, R. F. L., Recreation for mental cases, 87.

Sandy, William C., Extra-institutional activities for mental defectives in New York state, 167.
Saye, E. B., The control of communicable diseases in psychiatric hospitals, 79.
Spaulding, Edith R., The importance of endocrine therapy in combination with mental analysis in the treatment of certain cases of personality deviation, 373.
Strecker, Edward A., A preliminary study of the precipitating situation in 200 cases of mental disease, 503.

Thom, D. A., and Gerna S. Walker, Epilepsy in the offspring of epileptics, 613.

Uyematsu, Shichi, The platelet count and bleeding time in catatonic dementia præcox, 15.

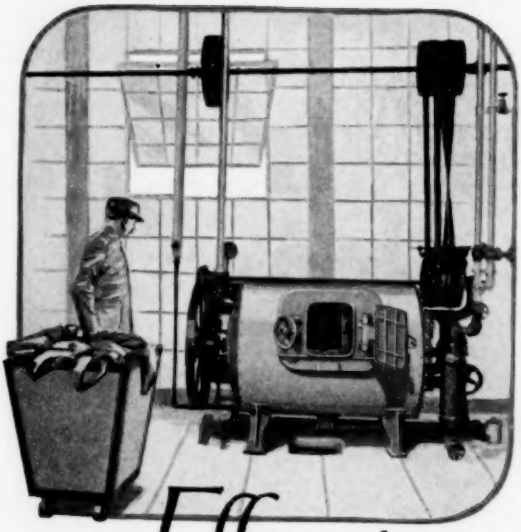
Viets, Henry, A note from Samuel Tuke to the New York Hospital (1811), 425.

Walker, D. A. Thom and Gerna S., Epilepsy in the offspring of epileptics, 613.
Wells, F. L., On the nature of thinking disorder, 537.
Weston, Paul G., Magnesium as a sedative, 637.
White, William A., Some considerations bearing on the diagnosis and treatment of dementia præcox, 193.

Ziegler, Lloyd H., A study of "X"; Psychometric and otherwise, 199.

# LIST OF ILLUSTRATIONS

Connotations as a Factor in the Mental Health of the Community.
Chart I, 48; Chart II, 51; Charts III-V, 61.
A Portrait of Benjamin Rush.
Portrait facing page 106.
Social Service and Out-Patient relations.
Chart I, 143; Chart II, 145; Chart III, 147; Chart IV, 148; Chart V, 150; Chart VI, 153.
A Study of "X": Psychometric and otherwise.
Curve I-III, 203; Curve IV, 205.
The Dedication of the George Alder Blumer Laboratory at Utica.
The George Alder Blumer Research Laboratory, Utica, N. Y., State Hospital, facing page 295.
A Preliminary Study of the Precipitating Situation in Two Hundred Cases of Mental Disease.
Chart 1, 523; Chart 2, 524; Chart 3, 530; Chart 4, 531.
Rating Scheme for Conduct.
Diagram, 562; Chart I-II, 569; Chart III, 570; Chart IV, 571.
Industrial Psychiatry.
Chart A, 664; Chart B, 665.
Report of a Case of Epidemic Encephalitis with Cord Changes Suggestive of the Possibility of an Early Syringomyelia.
Plates I-VII, 688.



*Effective*
*Sterilization saves*
*Your Bandages*

**Pennsylvania Hospital**
**saved $3,500 in one year**
**by**
**Sterilizing and Reissuing its Gauze.**

**An investigation made at the Rockefeller Institute by the Lederle Laboratories proved that the American Sterilizing Washer absolutely sterilizes. : : : :**

*WRITE FOR A COPY OF THE REPORT : :*

**The American Laundry Machinery Co.**
NEW YORK CINCINNATI
CHICAGO SAN FRANCISCO
The Canadian Laundry Machinery Co., Ltd., Toronto.

---

**Oconomowoc Health Resort**
**OCONOMOWOC, WIS.**

Building new—absolutely fireproof.
Built and equipped for treating Nervous and Mild Mental Diseases.
Location unsurpassed.
Readily accessible.
*Three hours from Chicago on C., M. & St. P. Ry.*

ARTHUR W. ROGERS, B. L., M. D.
Resident Physician-in-Charge

Nervous debility, nervous exhaustion, and all asthenic affections of the nervous system, so prevalent to-day, will respond to treatment which will replenish the reduced mineral reserves of the system and supply the necessary phosphorus to restore degenerated nerve cells

# FELLOWS' SYRUP OF THE HYPOPHOSPHITES,

*"The Standard Tonic for over fifty years,"*

contains the basic elements to ensure normal metabolism, together with the dynamic agents, quinine and strychnine, which make it a true stabilizer of shaken nerves

*Samples and Literature sent upon request.*

**FELLOWS MEDICAL MANUFACTURING CO., Inc.**

**26 Christopher Street** **New York, N. Y.**

# DR. BARNES SANITARIUM

STAMFORD, CONN.

A Private Sanitarium for Mental and Nervous Diseases. Also Cases of General Invalidism. Separate Department for Cases of Alcohol and Drug Addiction

**A modern institution of detached buildings, situated in a beautiful park of fifty acres, commanding superb views of Long Island Sound and surrounding hill country. Completely equipped for scientific treatment and special attention needed in each individual case. Fifty minutes from New York City. Frequent train service. For terms and booklet, address**

F. H. BARNES, M. D., Med. Supt.

**Telephone 1867 Stamford** STAMFORD, CONN.

# RING SANATORIUM AND HOSPITAL, Inc.

## ARLINGTON HEIGHTS, MASS.

*Eight miles from Boston*
*Telephone Arlington 81*

For Chronic, Nervous and Mild Mental Illnesses. Five Separate Buildings Permit of Segregation and a Variety of Accommodations

**ARTHUR H. RING, M. D., *Superintendent***